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QUEENSLAND.

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ANNUAL REPORT

ON THE

HEALTH AND MEDICAL SERVICES

OF THE

STATE OF QUEENSLAND

FOR THE

YEAR 1937-38.

PRESENTED TO PARLIAMENT BY COMMAND.

BRISBANE:
BY AUTHORITY: DAVID WHYTE, GOVERNMENT PRINTER.

A. 27—1938.

REPORTS UPON THE OPERATIONS

OF THE

HEALTH AND MEDICAL SERVICES

OF THE STATE OF QUEENSLAND;

TOGETHER WITH THE

Report of the Government Chemical Laboratory.

To the Honourable the Minister for Health and Home Affairs.

SIR,—I have the honour to submit for presentation to Parliament reports regarding the operations of the professional and scientific sections of the Department of Health and Home Affairs, as follows:—

Central Office of the Department of Health (Sir Raphael Cilento, Kt., M.D., B.S. (Adel.), D.T.M. and H. (Eng.), Director-General of Health and Medical Services).

Including Reports of the following sectional activities:—

Section of Enthetic Diseases (Geoffrey Hayes, M.B., Ch.M. (Syd.), Officer for Venereal Diseases);

Section of Microbiology and Pathology (E. H. Derrick, M.D. (Melb.), Director);

Section of Public Health Supervision (John Coffey, F.R.C.S. (Edin.), L.R.C.P., D.P.H., L.M. (Rot.), F.R.San.I. (Lond.), Deputy Director-General of Health and Medical Services);

Section of Medical Services Supervision: Private Hospitals (Abraham Fryberg, M.B., B.S. (Melb.), D.P.H., D.T.M. (Syd.));

With the following appendices:—

Appendix A.—State Nutritional Advisory Board.

Appendix B.—X-ray and other Electro-Medical Equipment Advisory Board.

Appendix C.—Hookworm Campaign (S. Thompson, Microscopist in Charge).

To which are added the following further reports:—

Section of Infant Welfare (T. Henry R. Mathewson, M.B., Ch.B. (Edin.), Acting Director of Child Welfare);

Section of School Health Services (L. St. Vincent Welch, M.R.C.S. (Eng.), L.R.C.P. (Lond.), Chief Medical Officer);

Section of Mental Hygiene (John Coffey, F.R.C.S. (Edin.), L.R.C.P., D.P.H., L.M. (Rot.), F.R.San.I. (Lond.), Inspector of Hospitals for the Insane).

And, under Section 24 *of "The Health Act of* 1937,"

The Report of the Government Chemical Laboratory (Frank E. Connah, F.I.C., A.A.C.I., Government Analyst and Chief Inspector of Explosives).

RAPHAEL W. CILENTO,
Director-General of Health and Medical Services.

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ANNUAL REPORT

OF THE

DIRECTOR-GENERAL

OF

HEALTH AND MEDICAL SERVICES

FOR THE

Year 1937-38.

ANNUAL REPORT OF THE DIRECTOR-GENERAL OF HEALTH AND MEDICAL SERVICES,

1937-38.

I have the honour to submit for the information of the Minister the Annual Report of this Department for the year ending 30th June, 1938.

VITAL STATISTICS.

The matter of birth and survival statistics continues to be of increasing importance, and the figures herein appearing enable comparison to be made in this respect between Queensland, the other States, the Commonwealth, and other countries inhabited by white races. From the comparison it will be observed that the figures for this State are somewhat better than those of the Commonwealth as a whole, thus maintaining the favourable relationship established in former years.

The estimated population of this State on 1st January, 1938, was 993,461, and that of the metropolitan area of Brisbane 318,430.

TABLE I.

CRUDE BIRTH RATE.

Country.	Year.	Birth Rate.	Year.	Birth Rate.
Commonwealth of Australia	1936	17·13	1937	17·43
Queensland	1936	19·17	1937	19·36
New South Wales	1936	17·31	1937	17·63
Victoria	1936	15·63	1937	16·02
South Australia	1936	15·17	1937	15·25
Western Australia	1936	18·84	1937	18·95
Tasmania	1936	19·84	1937	20·69
New Zealand	1936	16·64	1937	17·29
England and Wales	1936	14·8	1937	14·9
Scotland	1936	17·9	1937	Not available
Irish Free State	1936	19·6	1937	Not available
Canada	1936	20·0	1937	Not available

TABLE II.

DEATH RATE.

Country.	Year.	Death Rate.	Year.	Death Rate.
Commonwealth of Australia	1936	9·43	1937	9·44
Queensland	1936	8·78	1937	9·10
New South Wales	1936	9·14	1937	9·36
Victoria	1936	10·16	1937	10·03
South Australia	1936	9·30	1937	8·91
Western Australia	1936	9·40	1937	8·95
Tasmania	1936	10·34	1937	9·51
New Zealand	1936	8·75	1937	9·08
England and Wales	1936	12·1	1937	12·4
Scotland	1936	13·4	1937	Not available
Irish Free State	1936	14·4	1937	Not available
Canada	1936	9·7	1937	Not available

TABLE III.

RATES OF INFANTILE MORTALITY IN VARIOUS COUNTRIES.

Country.	Year.	Death Rate per 1,000 Births.	Year.	Death Rate per 1,000 Births.
Commonwealth of Australia	1936	41·16	1937	38·06
Queensland	1936	36·20	1937	35·64
New South Wales	1936	43·47	1937	40·68
Victoria	1936	42·31	1937	36·70
South Australia	1936	31·09	1937	33·06
Western Australia	1936	42·22	1937	37·52
Tasmania	1936	49·55	1937	41·73
New Zealand	1936	30·96	1937	31·21
England and Wales	1936	59·0	1937	Not available
Scotland	1936	82·3	1937	Not available
Irish Free State	1936	74·0	1937	Not available
Canada	1936	Not available	1937	Not available

COMMUNICABLE DISEASES.

The monthly incidence of notifiable diseases reported throughout the State is set out in the following tables, and, for comparison, totals for the years 1936 and 1937 are also given:—

TABLE IV.

COMMUNICABLE DISEASES (EXCLUSIVE OF VENEREAL DISEASES)—1ST JULY, 1937, TO 30TH JUNE, 1938.

(METROPOLITAN AREA.) Population—1st January, 1938, 318,430.

Diseases.	Months.												Totals.		
	1937.						1938.								
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	1937-38.	1936-37.	1935-36.
Anchylostomiasis ..	..	..	..	..	..	..	..	2	..	..	..	..	2	Nil	Nil
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Bilharziasis	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Cholera	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Coastal Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Diphtheria	36	29	29	34	38	36	23	44	37	43	40	66	455	475	594
Dysentery, Amœbic ..	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Dysentery, Bacillary ..	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Encephalitis Lethargica	..	..	..	..	..	..	..	..	..	..	..	..	Nil	1	Nil
Filariasis	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Lead Poisoning ..	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Leprosy	..	..	..	..	..	..	..	..	..	..	2	..	2	1	Nil
Leptospirosis (Weil's Disease, Paraweil's Disease, Seven-day Fever)	..	..	..	..	..	..	..	..	..	..	..	..	Nil	1	Nil
Malaria	1	..	..	1	..	..	..	..	..	..	..	..	2	1	2
Meningitis, Cerebro-spinal	1	..	..	..	..	..	..	..	..	..	..	..	1	2	Nil
Mossman Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Plague, Bubonic or Oriental	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Poliomyelitis, Acute Anterior	..	1	1	..	..	..	..	2	17	15	18	3	57	Nil	2
Puerperal Fever ..	..	..	..	..	..	1	..	2	3	2	2	3	13	5	7
Puerperal Pyrexia ..	..	..	..	2	4	4	..	..	..	..	..	1	11	7	4
Relapsing Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Sarina Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Scarlet Fever or Scarlatina	36	17	18	13	20	15	10	15	29	14	27	17	231	453	449
Smallpox, including Amaas or Alastrlm ..	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Tuberculosis, all forms	8	9	9	13	10	15	6	15	8	8	14	11	126	151	101
Typhoid Fever, including Paratyphoid Fevers	..	2	1	..	..	2	4	8	8	1	4	..	30	50	11
Typhus Fever, including Rural and Urban Forms and Japanese River Fever ..	..	..	..	..	..	..	1	..	1	..	..	..	2	2	Nil
Undulant (Malta) Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Yellow Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Totals	82	58	58	63	72	73	44	88	103	83	107	101	932	Nil	Nil
1936-37 Totals ..	109	103	95	103	128	100	73	66	88	70	116	98	1,149	1,149	..
1935-36 Totals ..	107	106	93	109	94	86	81	88	100	115	88	103	1,170	..	1,170

TABLE V.

EXTRA METROPOLITAN AREA. Population—1st January, 1938, 675,031.

Diseases.	Months.												Totals.		
	1937.						1938.								
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	1937-38.	1936-37.	1935-36.
Anchylostomiasis ..	..	1	11	..	1	..	..	..	1	..	4	..	18	4	8
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	Nil	1	Nil
Bilharziasis	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Cholera	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Coastal Fever ..	..	..	..	..	..	..	1	..	1	..	2	..	4	3	4
Diphtheria	50	34	40	26	14	26	38	28	46	43	70	67	482	634	772
Dysentery, Amœbic ..	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Dysentery, Bacillary ..	..	..	..	..	..	..	..	2	..	..	..	1	3	1	Nil
Encephalitis Lethargica	..	..	..	..	..	..	1	1	..	..	..	..	2	1	4
Filariasis	..	..	..	..	1	..	..	..	1	..	..	..	2	Nil	Nil
Lead Poisoning ..	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Leprosy	1	..	..	..	..	..	..	1	..	..	..	..	2	9	5
Leptospirosis (Weil's Disease, Paraweil's Disease, Seven-day Fever)	4	5	4	3	Nil	1	..	1	2	..	1	..	21	53	23
Malaria	..	..	..	..	..	..	..	..	..	..	..	..	Nil	4	12
Meningitis, Cerebro-spinal	..	..	..	..	..	..	..	..	..	..	..	..	Nil	2	3
Mossman Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Plague, Bubonic or Oriental	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Poliomyelitis, Acute Anterior	..	2	..	1	2	9	13	20	22	11	9	14	103	4	12
Puerperal Fever ..	..	1	..	..	1	1	..	3	1	..	1	1	9	12	8
Puerperal Pyrexia ..	..	..	..	1	1	1	2	1	1	..	..	2	9	7	6
Relapsing Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	1
Sarina Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Scarlet Fever or Scarlatina	47	16	14	15	10	13	24	21	19	24	29	19	251	375	327
Smallpox, including Amaas or Alastrim ..	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Tuberculosis, all Forms	7	9	11	8	13	18	9	4	17	8	14	10	128	118	113
Typhoid Fever, including Paratyphoid Fevers	..	1	2	5	7	3	3	9	6	4	5	3	48	40	44
Typhus Fever, including Rural and Urban Forms and Japanese River Fever ..	7	13	8	2	4	..	3	7	4	2	5	7	62	86	34
Undulant Fever ..	..	1	..	..	..	..	..	..	..	..	..	..	1	Nil	Nil
Yellow Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Totals	116	83	90	61	54	72	94	98	121	92	140	124	1,145	1,354	1,376
1936-37 Totals ..	174	129	103	103	86	97	96	81	125	119	113	128	..	1,354	..
1935-36 Totals ..	129	95	99	90	112	82	90	94	104	140	143	198	..	..	1,376

TABLE VI.

ANNUAL STATEMENT OF NOTIFIABLE DISEASES DURING CALENDAR YEAR 1937 (METROPOLITAN AREA).

Diseases.	Months.												Totals.	
	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	1937.	1936.
Anchylostomiasis	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Bilharziasis	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Cholera	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Coastal Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Diphtheria	43	18	27	30	50	47	36	29	29	34	38	36	417	579
Dysentery, Amœbic	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Dysentery, Bacillary	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Encephalitis Lethargica	..	..	..	..	..	..	..	..	..	..	..	..	Nil	1
Filariasis	..	..	...	..	..	..	..	..	..	..	..	..	Nil	Nil
Lead Poisoning	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Leprosy	1	..	..	..	..	..	..	..	..	..	..	..	1	Nil
Leptospirosis (Weil's Disease, Paraweil's Disease, Seven-day Fever)	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Malaria	..	..	..	..	..	..	1	..	..	1	..	..	2	3
Meningitis, Cerebro-spinal ..	..	..	..	1	..	..	1	..	..	..	..	..	2	1
Mossman Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Plague, Bubonic or Oriental ..	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Poliomyelitis, Acute Anterior ..	..	..	..	..	..	..	..	1	1	..	..	..	2	2
Puerperal Fever	..	..	..	..	..	..	..	..	..	..	..	1	1	9
Puerperal Pyrexia	2	..	1	..	..	1	..	..	..	2	4	4	14	5
Relapsing Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Sarina Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Scarlet Fever or Scarlatina ..	9	17	39	25	56	33	36	17	18	13	20	15	298	457
Smallpox, including Amaas or Alastrim	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Tuberculosis, all Forms ..	14	17	17	14	10	14	8	9	9	13	10	15	150	120
Typhoid Fever, including Paratyphoid Fevers	3	13	4	..	..	3	..	2	1	..	..	2	28	34
Typhus Fever, including Rural and Urban Forms and Japanese River Fever	..	1	..	..	..	..	..	..	..	..	..	..	1	1
Undulant (Malta) Fever ..	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Yellow Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Totals	72	66	88	70	116	98	82	58	58	63	72	73	916	1,212
1936 Totals	81	88	100	115	88	102	109	103	95	103	128	100	..	1,212
1935 Totals	77	56	81	99	107	91	107	106	93	109	94	86	1,106	..
1934 Totals	79	88	93	116	119	100	107	84	89	84	69	73	1,101	..
1933 Totals	121	100	219	111	99	90	89	80	86	77	95	101	1,268	..

TABLE VII.

ANNUAL STATEMENT OF NOTIFIABLE DISEASES DURING CALENDAR YEAR 1937 (EXTRA METROPOLITAN AREA).

Diseases.	Months.												Totals.	
	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	1937.	1936.
Anchylostomiasis	..	..	..	..	1	..	..	1	11	..	1	..	14	7
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	Nil	1
Bilharziasis	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Cholera	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Coastal Fever	1	..	..	..	..	..	..	..	..	..	..	..	1	4
Diphtheria	46	24	54	60	53	64	50	34	40	26	14	26	491	762
Dysentery, Amœbic	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Dysentery, Bacillary	..	..	..	1	..	..	..	..	..	..	..	..	1	Nil
Encephalitis Lethargica	..	..	..	..	..	..	..	..	..	..	..	..	..	3
Filariasis	..	..	..	..	..	..	..	..	..	..	1	..	1	Nil
Lead Poisoning	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Leprosy	1	..	3	..	..	..	1	..	..	..	..	..	5	6
Leptospirosis (Wells Disease, Paraweil's Disease, Seven-day Fever)	..	..	2	1	..	1	4	5	4	3	..	1	21	54
Malaria	..	..	..	..	..	..	..	..	..	..	..	..	Nil	6
Meningitis, Cerebro-spinal ..	1	1	..	..	..	..	..	..	..	..	..	..	2	2
Mossman Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Plague, Bubonic or Oriental ..	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Poliomyelitis, Acute Alterior. ..	1	1	..	..	..	..	..	2	..	1	2	9	16	11
Puerperal Fever	..	..	1	2	1	1	..	1	..	..	1	1	8	13
Puerperal Pyrexia	..	..	1	1	..	..	..	..	..	1	1	1	5	9
Relapsing Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Sarina Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Scarlet Fever or Scarlatina · ..	20	26	40	38	42	39	47	16	14	15	10	13	320	338
Smallpox (including Amaas or Alastrim)	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Tuberculosis, all Forms ..	16	10	12	6	11	9	7	9	11	8	13	18	130	122
Typhoid Fever, including Paratyphoid Fevers	8	6	3	3	4	2	..	1	2	5	7	3	44	43
Typhus Fever, including Rural and Urban Forms and Japanese River Fever	2	12	8	7	..	8	7	13	8	2	4	..	71	69
Undulant (Malta) Fever ..	..	..	..	..	..	..	..	1	..	..	..	..	1	Nil
Yellow Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	Nil
Totals	96	80	124	119	112	124	116	83	90	61	54	72	1,131	1,450
1937 Totals	90	95	104	139	141	189	174	129	103	103	86	97	..	1,450
1936 Totals	79	72	109	87	78	119	129	95	99	90	112	82	1,151	..
1935 Totals	124	125	141	131	138	1,124	128	103	104	108	83	82	2,391	..
1934 Totals	155	126	195	193	177	135	128	111	130	109	120	110	1,689	..

The following particulars are set down in regard to diseases of major frequency or graver significance:—

DIPHTHERIA.

The numbers of cases of diphtheria reported for the last three years are as follows:—

—	1937–38.	1936–37.	1935–36.
Brisbane Metropolitan Area	455	475	594
Extra Metropolitan Area	482	634	772
Totals	937	1,109	1,366

SCARLET FEVER.

The total number of cases notified amounted to 482, which is the lowest total of any year since 1928-29, when 470 cases were reported.

The numbers of cases reported for the last three years are as under:—

—	1937–38.	1936–37.	1935–36.
Brisbane Metropolitan Area	231	453	449
Extra Metropolitan Area	251	375	327
Totals	482	828	776

LEPROSY.

Previously leprosy has been accorded brief treatment in the Annual Report, but the increasing importance of the disease in Queensland indicates the necessity for more detailed description.

There are now several well-known areas where leprosy is endemic in this State, and it is the only State of the Commonwealth where the disease is a major problem affecting white people. In Tasmania, Victoria, South Australia, and southern Western Australia the disease is now practically unknown. In New South Wales the cases are exceedingly few. On the other hand, in northern Western Australia and in the Northern Territory of the Commonwealth the disease is very much more common, but occurs almost entirely amongst aboriginals. In Queensland it is endemic both amongst white and amongst coloured residents. This, of course, is no new situation.

Leprosy has been known here for more than fifty years, and there has been no outstanding increase in the number of cases reported; in fact, in terms of population, the incidence now is much less than it was during the period of native labour, when the disease was introduced here by Chinese coolies.

Nevertheless, leprosy has a particular interest here, because it is an old disease seen in a new environment, and, owing to the relative smallness of the population and the few cases, there is a better opportunity to observe its propagation and transference than elsewhere. Moreover, for the same reason, it is a disease which, in Australia, should be amenable to control by public health measures. As mentioned in another place, "*The Health Act of* 1937" provided particular opportunities for the further control of the disease by providing power to examine suspects and contacts at such times and for such periods as the Director-General shall determine.

Evidence of marked spread of the disease in closed communities occasionally occurs, and one such instance in an aboriginal station has been examined in North Queensland during the last eighteen months. This investigation has been assisted by the Commonwealth of Australia, which, through the National Health and Medical Research Council, allocated £500 to the incidental expenses of the work. In spite of this grant, the work, of course, would have been impossible had not the Minister in charge of this Department permitted the services of the officers investigating the situation to be regarded as part of their normal duty.

The station concerned was established in 1914, and an attempt is being made to trace the origin and spread of the disease from that date. The first reputed case occurred in an old aboriginal woman who died in 1916, and the second in a male aboriginal belonging to the same tribe who died at the settlement in 1928. His case was not diagnosed, and he lived with his family in casual contact with other settlement natives. The third reputed case was also a "cousin" or "brother," and was actually the first proved case at the settlement. He was diagnosed in 1925. A third "cousin" or "brother" was constantly associated with the other two.

These three men have left descendants, several of whom are lepers. The first of them left two sons, who are at present in Peel Island Lazaret, where his only grandchild also was admitted in March, 1938. The third "brother" left no children, but the second, amongst his children, had two girls and a boy who were admitted as lepers in 1937.

It is particularly difficult to trace contacts, owing to the fact that natives rarely know their own relationships and, since their social organisation broke down a generation ago, use such terms as "father," "mother," "uncle," "cousin," &c., as a matter of custom rather than kinship.

A preliminary investigation at the settlement in 1937 showed that there were, in all, eight lepers (all blood relations) who were bacteriologically positive. The total has now reached fourteen, and, of these, several are house contacts only. The significant point, however, is that about twenty-five other natives exhibit lesions suggestive of leprosy, although these are bacteriologically negative. It is probable that several of them will become bacteriologically positive later.

In every case in this group the neural type of leprosy has predominated, nodules, lepromata, &c., being infrequent. The neural lesions are, variously, areas of anæsthesia and paræsthesia, areas of depigmentation and hypopigmentation, with thickened nerve trunks, hyperidrosis, and, occasionally, a few plaques indicative of tuberculoid leprosy. As is well known, these cases give positive smears only after difficult and intensive search.

The disease progresses slowly, the type of lesion encountered seeming to indicate that the resistance of the natives is fairly high. The majority of the natives are well-nourished and well-developed.

A complete list of the families yielding suspects or proved cases has been made, and every member of these families is under examination at intervals of three months.

During the year an attempt was made to institute, as a diagnostic measure, the methylene blue method practised by Montel and other leprologists since 1934, but apparently not previously attempted in Australia. All who have used the method comment on the marked tattooing of the lesions, the dye being apparently retained by the lepra cells. The experiment was, however, disappointing. Intravenous injections on successive days (5 c.c. to 15 c.c. first injection; 10 c.c. to 30 c.c. second injection) were followed by uniform and characteristic immediate effects, but no staining of the lesions was observed in any case at any of the times of examination (5 minutes, 1 hour, 4 hours, 24 hours, 48 hours, 14 days). These disappointing results were probably due to the fact that the overseas reports are of nodular cases, not of neural leprosy.

Dr. Cecil Cook in 1925 made a careful examination of leprosy in Queensland, and in his report (published two years later) made the following statement:—

> "The venue of heaviest incidence has changed periodically with altered social conditions. Before 1890, the goldfields of the Peninsula furnished the great majority of cases in Chinese and aboriginals, the canefields of Mackay, Bundaberg, and Moreton the South Sea Islanders, whilst sporadic cases amongst Europeans were occasionally reported in the southern portions of the State, principally derived, no doubt, from endemic areas in New South Wales.
>
> "From 1890 to 1905, leprosy in Queensland was principally a matter of endemicity in kanakas. Practically the whole of the eastern coast was included in the endemic areas at that time—Bowen-Proserpine, St. Lawrence-Yaamba, and Gladstone being the only free areas. It is significant that these were localities to which the immigration had been greatest—viz., Cairns, Mackay, Bundaberg, and the South Coast.
>
> "With the virtual elimination of the kanaka as a feature of the population, consequent upon the termination of the indenture system, the malady disappeared from those localities where its endemicity had depended upon the existence of an appreciable island community. Subsequent to 1905, or thereabouts, therefore, it has been found that leprosy has gradually disappeared from Bundaberg and Mackay. On the other hand, in those localities where sporadic cases were first noticed amongst Europeans, either independently of or in conjunction with endemicity in coloured aliens, the disease has persisted and for the most part increased in incidence. Such are Cairns, Townsville, Rockhampton, Maryborough, and Brisbane. From the central districts alone, twenty-nine infected Europeans have been reported in the period 1908-1926. Meantime, the disease has persisted amongst aboriginal tribes wherever these remain in appreciable numbers."

Although, with the scanty data available to him, these conclusions and predictions were of remarkable accuracy, further evidence in connection with the situation is not, perhaps, so promising in so far as some of the coastal towns are concerned.

The concentration of aboriginals in settlements has materially aided the detection of the disease, and has been of considerable value.

From the public health point of view, it is much more desirable that cases should be located at single settlements rather than that they should be scattered throughout a wide range of territory, in contact with white persons.

Some public concern is sometimes occasioned amongst the people in the neighbourhood of these settlements when it has been heard that a leper or several lepers have been detected locally. It cannot be too strongly emphasised that the detection of these lepers in settlements, far from being an indication of increased danger, demonstrates the fact that lepers who might otherwise be wandering round the countryside with opportunities for broadcasting infection are now under supervision, and the community is correspondingly better protected. *The greater the number of lepers detected, the less the danger to the community.*

The present position is shown in Fig. 1, which represents the probable place of infection in 129 cases of leprosy (58 white persons and 71 aboriginals) which have occurred in Queensland from and including the year 1925 to June, 1930, 1938 (see note to Fig. 1).

In the case of aboriginal lepers, some reservations are necessary. Most of the aboriginal lepers were detected on mission stations, and the exact place of infection is not known, though it probably lies within the district served by the mission station. The majority of aborigines are now gathered into settlements. In future, the control of leprosy amongst aborigines should be an easier matter than in the past.

Except on the coast, there appears to be no endemic area that could be described as distinctively established amongst white persons.

Table VIII. shows details of 126 cases of leprosy admitted to Peel Island Lazaret from 1925 to 1937, both years inclusive.

TABLE VIII.

FIRST ADMISSIONS TO LAZARET, 1925–1937, AND PROGRESS OF DISEASE.

Year.	Sex.		Total.	Progress of Disease.				Remarks.
	Male.	Female.		Died.	Discharged.	Readmitted.	Still at Lazaret.	
1925 ..	6	1	7	4	3	0	0	
1926 ..	6	2	8	2	5	0	0	One female escaped
1927 ..	1	1	2	0	2	1	0	
1928 ..	5	2	7	3	4	1	0	
1929 ..	3	0	3	2	0	1	0	
1930 ..	6	2	8	4	4	1	0	
1931 ..	10	2	12	3	7	0	2	
1932 ..	7	5	12	3	5	2	6	
1933 ..	7	5	12	5	2	1	6	
1934 ..	11	1	12	4	2	0	6	
1935 ..	8	6	14	2	5	1	8	
1936 ..	9	3	12	2	3	2	9	
1937 ..	9	8	17	0	0	0	17	
Grand Totals	88	38	126	34	42	10	54	

Eighty-eight cases were males and 38 females. Of these, 42 have been discharged, and of these, again, 10 have been readmitted to date. The present condition of the 32 patients who have been discharged and not readmitted to date cannot be ascertained from departmental records in many cases, as their period of surveillance has expired. The death rate is seen to be high, 34 cases having died.

Annual Incidence.—Fig. 2 shows the annual incidence of leprosy detected in Queensland during this period, as well as the proportion of white to coloured lepers in these years. This

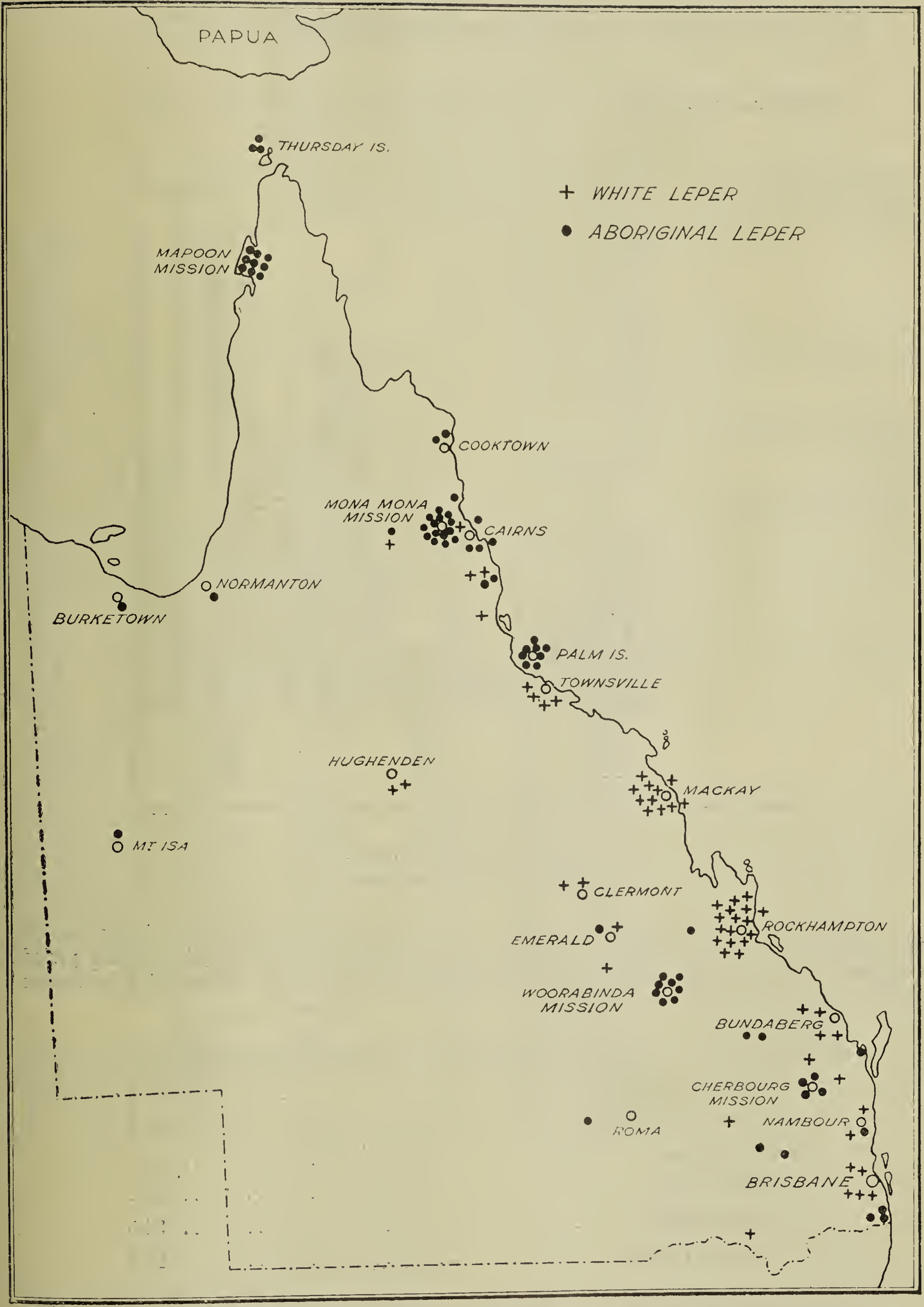


FIGURE 1.—Showing Occurrence of Cases of Leprosy in Queensland from and including 1925 to 30th June, 1938.

NOTE.—129 cases are plotted on this map—58 whites and 71 aboriginals. A few cases have been omitted where no definite history of residence was obtained.

graph indicates that since 1930 there has been a marked increase in the number of coloured lepers detected in Queensland. In 1935 and 1936 the number of white persons admitted to Peel Island has shown a definite increase.

The cases are not shown corrected for increased population.

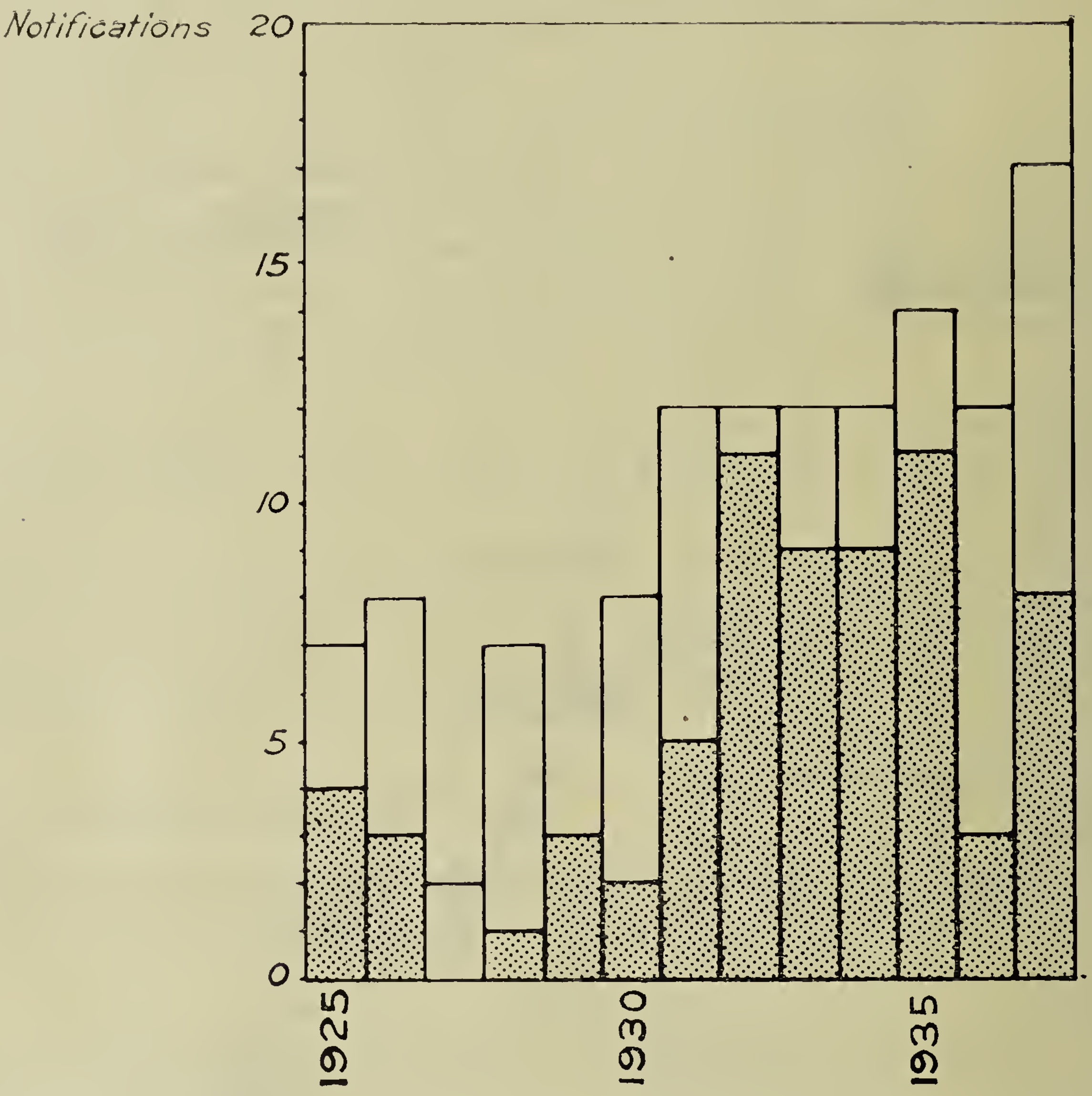


FIGURE 2.—Showing Annual Incidence of Leprosy Notifications and Proportion of White and Coloured Lepers.

Coloured Lepers—Shaded Portion.

White Lepers—Unshaded Portion.

Quinquennial Incidence.—Fig. 3 shows the quinquennial incidence of leprosy in Queensland from 1900 to 1935. A marked increase is shown for the quinquennial period 1931-1935, the total jumping from 28 in 1926-1930 to 62 in 1931-1935. At present, this increase is largely caused by the increased number of coloured lepers detected.

Age Distribution of Leprosy.—The average age at notification is as follows:—

(*a*) White (both sexes)	41·0
(*b*) Coloured (both sexes)	33·9
(*c*) White males	43·3
(*d*) White females	34·1
(*e*) Coloured males	34·5
(*f*) Coloured females	29·0

The numbers are too small to establish an incidence in the various age groups. The youngest leper was seven and the oldest ninety-two; it is to be remembered, of course, that cases are usually found after the disease has existed for some years, and, in many instances, for many years. The outstanding fact of importance is that an increasing number of children show infection, indicating the established endemicity of the disease.

The further investigation of the disease has been continued, and certain changes in the routine method of supervision and treatment have been introduced at the lazaret at Peel Island.

Particulars with regard to the situation at that lazaret, however, have been made the subject of separate report, as follows:

TABLE IX.

RETURN SHOWING PARTICULARS OF LEPERS DETAINED AT PEEL ISLAND, 30TH JUNE, 1938.

No.	Name.	Sex.	Native of.	Occupation.	Admission.		Where From.	Remarks.
					Age.	Date of.		
1	O. F.	F.	Queensland	D. D.	9	6-2-02	Townsville	Discharged 18th May, 1935. Readmitted 19th March, 1937
2	M. G.	F.	Queensland	D. D.	20	10-8-16	Brisbane	
3	J. W.	M.	England	Labourer	51	14-4-17	Townsville	Discharged 18th December, 1922. Readmitted 24th June 1931
4	W. K.	M.	Australia		11	11-3-19	Rockhampton	
5	E. M.	M.	Aboriginal		16	16-12-19	Cherbourg	
6	R. G. S.	M.	Queensland		16	1-2-22	Rockhampton	
7	A. H.	M.	Aboriginal		26	22-9-24	Taroom	
8	F. G.	M.	Aboriginal	Fisherman	65	23-9-24	Southport	
9	S. L.	M.	Aboriginal		22	6-12-24	Springsure	
10	G. D.	M.	Aboriginal		35	24-3-26	Palm Island	
11	E. W.	M.	Aboriginal		15	5-6-27	Palm Island	
12	M. E. D.	F.	Australia	D. D.	58	22-11-30	Mackay	
13	R. S.	M.	Aboriginal		8	25-3-31	Palm Island	
14	I. S.	F.	Aboriginal		13	4-11-31	Palm Island	Sister to R. S. (above)
15	W. D.	M.	Aboriginal	Pearler	20	13-5-32	Mapoon	
16	J. D.	F.	Aboriginal		30	13-5-32	Mapoon	
17	E. J.	F.	Aboriginal		27	13-5-32	Mapoon	
18	D. F.	F.	Aboriginal		7	15-9-32	Woorabinda	Discharged 26th March, 1934. Readmitted 3rd March 1937
19	B. D.	M.	Aboriginal	Horsebreaker	40	6-1-33	Jimbour	
20	K. M.	F.	Aboriginal		45	31-1-33	Hawkwood	
21	L. T.	F.	Aboriginal		37	1-7-33	Nambour	
22	A. A.	M.	Russia	Cane farmer	35	14-9-33	Tully	Discharged 20th November, 1936. Readmitted 9th April, 1937
23	M. B.	F.	Aboriginal		30	5-10-33	Cherbourg	
24	R. A	M.	Aboriginal		18	9-12-33	Palm Island	
25	R. J.	M.	Aboriginal	Labourer	28	6-7-34	Beaudesert	
26	T. J.	M.	Aboriginal		13	14-7-34	Mapoon	
27	E. B.	M.	Aboriginal		28	14-7-34	Mapoon	
28	O. H.	F.	Aboriginal		20	14-7-34	Mona Mona	
29	P. W.	M.	Aboriginal		10	14-7-34	Mapoon	
30	G. P.	M.	Aboriginal		40	5-1-35	Cooktown	
31	W. L.	M.	Queensland		34	6-3-35	Duaringa	
32	L. B.	M.	Aboriginal		19	23-3-35	Mona Mona	
33	K. B.	M.	Aboriginal		50	26-7-35	Fantome Island	
34	J. K.	M.	Aboriginal		55	26-7-35	Fantome Island	
35	T. M.	M.	Aboriginal		35	26-7-35	Burketown	
36	D. M.	M.	Aboriginal		44	16-8-35	Woorabinda	
37	V. L.	F.	Aboriginal		19	9-10-35	Woorabinda	
38	M. L.	F.	Aboriginal		9	6-12-35	Woorabinda	Sister to V. L. (above)
39	A. B.	M.	England	Labourer	38	4-1-36	Mackay	
40	M. M.	M.	Aboriginal		36	4-3-36	Woorabinda	
41	G. O.	M.	Aboriginal		30	23-3-36	Palm Island	
42	R. Mc. F.	M.	Queensland	Stockman	19	26-8-36	Nebo	
43	V. M.	F.	Aboriginal		28	19-9-36	Mona Mona	
44	E. J. T.	M.	England	Shearer	46	25-9-36	Rockhampton	
45	A. N.	M.	Germany	Farmer	56	6-11-36	Brisbane	
46	E. C.	F.	Aboriginal		20	6-11-36	Mona Mona	
47	J. D. C.	M.	Queensland	Student	21	6-11-36	Brisbane	
48	T. S.	M.	Queensland	Labourer	33	5-1-37	Bundaberg	
49	J. J. B	M.	Queensland	Clerk	21	11-1-37	Townsville	Mother and two sons
50	G. G. B.	M.	Queensland	Clerk	19	11-1-37	Townsville	
51	M. B.	F.	Queensland	D. D.	50	11-1-37	Townsville	
52	G. A.	M.	England	Grazier	71	25-1-37	Hughenden	
53	P. M.	M.	Aboriginal		61	26-1-37	Urangan	
54	M. F. A.	F.	Queensland	D. D.	31	16-2-37	Emu Park	
55	Z. B.	F.	Aboriginal		55	10-3-37	Cherbourg	
56	E. H.	F	Aboriginal		23	9-4-37	Mona Mona	
57	R. H.	M.	Aboriginal		17	9-4-37	Mona Mona	
58	M. H.	F.	Aboriginal		19	9-4-37	Mona Mona	
59	A. J. D.	M.	Queensland	Labourer	40	18-6-37	Rockhampton	
60	W. W.	M.	Aboriginal		24	19-6-37	Mount Isa	
61	J. H.	M.	Queensland	Pensioner	80	16-9-37	Brisbane	Formerly of Mackay
62	D. C.	M.	Aboriginal		17	9-10-37	Thursday Island	
63	A. D.	F.	Australia	D. D.	47	13-11-37	Rockhampton	Voluntary patient
64	E. B.	F.	Aboriginal		33	13-11-37	Cherbourg	
65	E. B.	F.	England	D. D.	92	8-2-38	Rockhampton	
66	A. N.	F.	Aboriginal		10	30-4-38	Mona Mona	
67	F T.	F.	Aboriginal		8	30-4-38	Mona Mona	
68	N. H.	M.	Aboriginal		14	30-4-38	Mona Mona	
69	G. C.	M	Aboriginal		30	30-4-38	Normanton	
70	M. M.	F.	Queensland	D. D.	39	3-5-38	Goondiwindi	

REPORT ON PEEL ISLAND LAZARET FOR 1937-38.

VISITING MEDICAL OFFICER: D. W. JOHNSON, M.B., B.S.

On 1st July, 1937, 74 patients were detained at the lazaret. These consisted of 22 white males, 6 white females, 31 coloured males, and 15 coloured females. (*See* Table X.)

During the year 14 patients were admitted, 8 being white patients and 6 being aborigines. Of these 4 white patients were readmitted. During the same period 3 white patients and 2 aborigines were discharged on parole.

The death rate was heavy during the year, as 13 patients died. The majority of these were advanced in years.

At 30th June, 1938, 70 patients remained at the lazaret. Of these, 16 were white males, 8 were white females, 29 were coloured males, and 17 were coloured females. Details of these patients are seen in Table IX.

All patients receive treatment regularly with chaulmoogra or hydnocarpus oils or their derivatives, both orally and by intramuscular and subcutaneous injection. Particular attention, however, is paid to diet, and patients receive a well-cooked, abundant variety of foods. The milk supply has been increased, and fruit and green vegetables are liberally supplied.

It has been found that aboriginals, especially, respond to treatment very quickly if admitted in the early stages of the disease, and this can be largely attributed to the good diet available. On their discharge they return to an unbalanced, deficient dietary, and frequently relapse.

During the year a six-bed emergency hospital, for acute and advanced cases, has been erected and is almost ready for occupation. This will be of great benefit, as it will enable those cases needing frequent attention to be centralised in one building.

Further improvements are contemplated.

In addition, the records of all cases of leprosy will be entered on the book form originally prepared by the Commonwealth Government in 1931, and these records will be kept in duplicate, one copy being retained at the Department of Health and Home Affairs in William Street, Brisbane. It is intended to add photographs of lesions, in order to establish a visual record of progress or decline.

As in previous years, it has been the aim of the Department to make the lot of the patients as comfortable as possible, and, where justified, requests for luxuries are not refused. Frequent visits by relatives are encouraged.

The staff has continued to give loyal and efficient service.

TABLE X.

RETURN SHOWING ADMISSIONS, DISCHARGES, &C., OF PATIENTS AT PEEL ISLAND LAZARET FOR THE YEARS 1925–1938.

—	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.	1931-32.	1932-32.	1933-34.	1934-35.	1935-36.	1936-37.	1937-38.
In Lazaret on 1st July—														
White	39	45	42	38	41	32	33	32	31	30	30	24	23	28
Coloured	25	27	34	37	36	32	28	25	30	28	30	36	42	46
Admitted—														
White	8	7	3	8	4	5	10	6	2	5	2	5	16	8
Coloured	9	10	6	2	2	1	5	10	8	6	12	11	9	6
Discharged—														
White	2	7	5	4	12	3	7	6	2	3	4	4	8	3
Coloured	2	..	1	1	3	1	3	2	3	3	2	2	2	2
Died—														
White	..	2	1	1	1	1	4	1	1	2	4	2	3	9
Coloured	5	3	11	2	3	4	5	3	7	1	4	3	3	4
Remaining in Lazaret on 30th June—														
White—														
Males	29	32	31	32	24	29	27	25	23	24	19	17	22	16
Females	16	10	7	9	8	4	5	6	7	6	5	6	6	8
Coloured—														
Males	25	30	31	29	26	23	21	22	21	20	27	29	31	29
Females	2	4	6	7	6	5	4	8	7	10	9	13	15	17
Totals	72	76	75	77	64	61	57	61	58	60	60	65	74	70

THE LAZARET, PEEL ISLAND, QUEENSLAND.

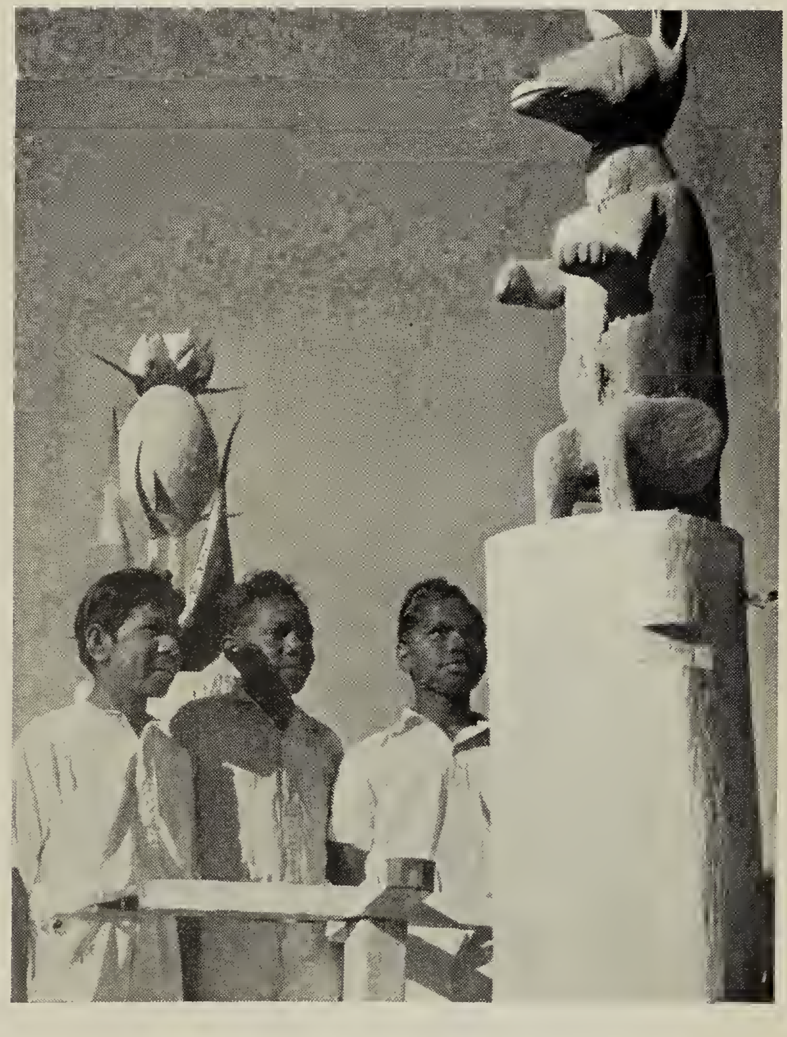
1. Patients' Cottages and Common Room.

2. Native Patients' Compound.

3. Social Hall.

4. Newly Constructed Hospital.

5. Church at Lazaret.



6. Solid Wood Carvings by Natives.

[Photographs 3, 5, and 6 furnished by courtesy of The Telegraph Newspaper Co. Ltd.

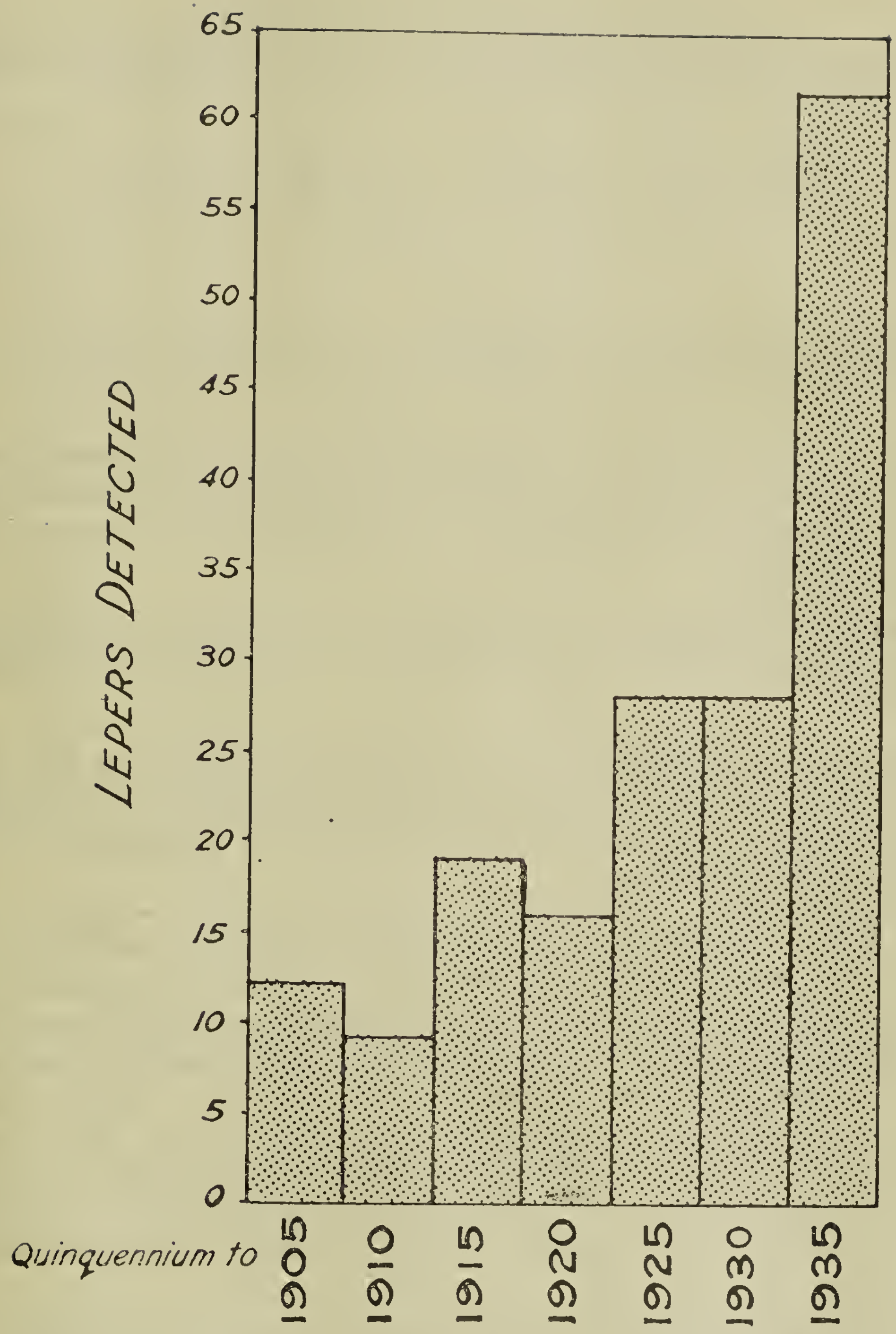


FIGURE 3.—Showing Cases of Leprosy detected in Queensland by Quinquennial Periods, 1900-1935.

PLAGUE.

No case of plague has been reported in the State since the year 1922. All precautions possible are taken by Local Authorities in the areas under their control. This Department is mainly concerned with the examination of "potentially suspect" material. During the year the Department's Laboratory examined 6,593 smears and 26,520 carcases of rodents.

The campaign against rats in relation to leptospirosis in Queensland, to which reference is made elsewhere, is naturally of particular value in respect of plague also.

TUBERCULOSIS (All Forms).

The incidence of tuberculosis shows a slight decrease, the number of cases reported being 254, as against 269 for 1936-37 and 214 for 1935-36.

Special arrangements were made in "*The Health Act of* 1937" for the inclusion of a clause permitting the Director-General to make regulations in respect to the examination, isolation, restriction, detention, treatment, and welfare of persons found to be affected with tuberculosis in any form. It is hoped, with the assistance of the Brisbane and South Coast Hospitals Board and the Local Authorities under "*The Hospitals Act of* 1936" and "*The Local Government Act of* 1936," respectively, that arrangements can be made for more adequate treatment of incipient cases, and for the institution of a greater measure of preventive procedures adequately supervised.

ANCHYLOSTOMIASIS.

The usual campaign measures for the control of this disease have been continued during the year; details are set out in the report which is attached as Appendix C, submitted by the officer in charge of that work.

Endemic Typhus Fever (All Forms).

During the year there were reported 64 cases, as against 88 in 1936-37 and 34 in 1935-36.

Leptospirosis (Paraweil's and Weil's Disease).

Twenty-one cases have been recorded, as against 54 cases for 1936-37 and 23 cases for 1935-36.

The type of case continues extremely mild. As mentioned elsewhere, this increase of cases does not represent any increase in endemicity in the disease, but is the result of more efficient search by officers with better facilities than were available formerly.

In spite of the large number of cases recorded, there was, for the second year, no application for a general burning order made to the Industrial Court by the workers. Representatives of the Department worked in association with the cane inspectors and the representatives of the workers in each mill area.

All fields that are rat-infested or are likely to be a source of danger are inspected, and if there is any indication that burning before harvesting would be profitable, an order is made accordingly.

All sections of the community have co-operated excellently in this regard, and there has been very little friction. Reports from the canefields indicate that rat infestation is less this year than last. The Pest Boards have assisted by active campaigns of poisoning, &c., to keep the rat population at a minimum.

The success of the cane inspection system, together with the record crops, cleaner farming, and good weather conditions, all contributed to a very satisfactory state of affairs. Only 17 cases of leptospirosis were reported from the eight mill areas under control during the 1937 season. With one exception, these were of a very mild nature, the patients being only a few days in hospital. No deaths occurred throughout the whole area. Each case was followed up, and soil and water samples taken where necessary for estimation of pH. Thanks are due to Dr. H. W. Kerr, Director of the Bureau of Sugar Experiment Stations, for these analyses. In addition, all cane on suspected farms, irrespective of condition or rat infestation, was ordered to be burnt before harvesting. The total area thus dealt with was 400 acres, distributed through seven mill areas.

Except in Tully area, where 382 acres were left uncut, there was little "standover" cane to provide harbourage for rodents during the slack season.

The attached tables, prepared by the inspector in charge (J. M. Kennedy), summarise the work done:—

TABLE XI.

Northern Cane Areas—Final Summary of Cane Inspections by Health Inspectors. Season, 1937.

Mill Areas.	Farms Inspected.	Acres Inspected.	Fields Inspected.	Fields Burned.	Acres Burned.	Burn Orders.
Johnstone	351	3,698·00	431	61	344·50	49
Goondi	313	3,772·30	405	69	461·10	62
Mourilyan	243	4,161·25	443	69	404·25	53
Mulgrave	655	5,177·95	699	88	550·15	57
Babinda	907	3,861·00	1,055	99	560·55	86
Tully	304	2,680·60	362	32	135·60	25
Victoria	277	2,010·00	331	53	429·10	40
Macknade	288	2,685·50	328	63	412·15	25
Totals	3,338	28,046·60	4,052	534	3,297·40	398

TABLE XII.

Mill Areas.	Acres Harvested.	Tonnage Crushed.	Total Tonnage Burned.	Acres Burned.	% Burned.
Johnstone	10,539	273,744	49,912	..	18·0
Goondi	7,461	196,463	35,206	1,846	17·0
Mourilyan	8,255	192,361	51,780	..	26·0
Mulgrave	12,000	305,740	75,849	..	24·8
Babinda	10,300	257,227	42,325	..	16·3
Tully	11,787	293,615	83,323	..	28·0
Victoria	13,087	312,036	91,598	4,935	29·0
Macknade	11,470	255,754	82,170	4,723	32·0
Totals	84,899	2,086,940	512,163	..	..

Remarks.—Column 4, Table XII., total cane burned in acres—only obtained from C.S.R. Mills,

TABLE XIII.

Northern Cane Areas, 1937—Leptospirosis Cases.

Mill Areas.	No. of Cases.	British.	German.	Italian.	Maltese.	Greek.	Jugo-slav.
Johnstone	5	3	0	1	1	0	0
Goondi	2	0	0	0	1	1	0
Mourilyan	3	0	1	2	0	0	0
Babinda	1	1	0	0	0	0	0
Mulgrave	1	0	0	1	0	0	0
Tully	0	0	0	0	0	0	0
Victoria	2	0	0	2	0	0	0
Macknade	2	0	0	2	0	0	0
Innisfail Town	1	0	0	0	0	0	1
Totals	17	4	1	8	2	1	1

Remarks.—Three of the four British cases reported were in the same gang. By occupation the cases were—Canecutters, 15; scrubfaller, 1; and general labourer, 1.

There appears to be a seasonal cycle of rat increase, doubtless related to meteorological cycles of weather, producing (owing to increased growth of vegetation) abundance of food, multiplied cover, and decreased facilities for clearing harbourage places. At present this cycle is favourable to rat control operations. While that is the case, the ordinary measures of protection appear to be adequate, but should the seasons, as is to be expected, take a turn favouring the rat, doubtless intensified measures will be necessary.

The situation is being carefully watched to provide against any such contingency.

Investigations into the various forms of leptospirosis are being further forwarded in the laboratory of the Department. As anticipated, these observations have demonstrated effectively that the common disease in the fields is not the classical Weil's disease of the text-book, which, indeed, has only been found to occur on rare occasions in the fields and in sewer workers in Brisbane.

Distribution of leptospirosis throughout Queensland by at least four serological strains of *Leptospira* has been determined, and these have been typed against strains prevailing elsewhere in Europe and Asia.

Since the information regarding the disease renders the local problem unique, it will shortly be discussed and made available in pamphlet form.

Eye Complications of Leptospirosis.—One medical aspect is sufficiently important to be included here. The severity of the 1933-34 outbreak provoked some over-reaction on the part of patients and medical men alike, and workers in the fields remained apprehensive for several years. Some of the more ignorant of the foreign workers, indeed, reacted so strongly to the general atmosphere of panic, with its anticipation of death or permanent incapacity, that they formed a very definite problem. With the passage of time, the great majority have returned to ordinary work, but several brought claims against the State Insurance Commissioner for compensation in respect of "permanent incapacity for labour."

One of these cases was very fully heard in the Magistrates Court at Ingham and subsequently on appeal in the Industrial Court, Brisbane. The claim was rejected in the former court, and the appeal was rejected in the Industrial Court.

A further series of cases brought early in 1938 on similar grounds was emphatically rejected in the Magistrates Court in Brisbane.

In Queensland, as elsewhere, no evidence of permanent invalidity has been observed. The usual period of incapacity runs for from nine days to three months.

In medical evidence advanced by private practitioners on behalf of the claimants, however, stress was laid upon the fact that one man who had suffered from the disease was "permanently blinded." In rebuttal, it was advanced by departmental medical opinion that, while mild eye involvement was relatively common and severe eye involvement occasionally occurred, the experience of workers on similar diseases in Japan indicated the probability that the damage that might result would, by no means, involve blindness, but would probably be slight.

The subsequent history of the case advanced as evidence of "permanent blindness" is therefore interesting, and may be prefaced with some reference to the clinical aspects of so-called "Hasami fever" (*Hasamiyami*), an endemic disease of Japan resembling Weil's disease, and very closely resembling that commonly found in North Queensland.

Saigo Kotorii, from the clinic of the Medical Faculty of Nagasaki, published a paper in the *Klinische Wochenschrift* (10th August, 1935, page 1147) fully describing this interesting condition. He mentions that in the district of Hasami, in the province of Nagasaki, where he lives, he has recorded paraweil's disease over a period of thirty-two years, sometimes as *nanukayami* ("seven-day fever"), and sometimes as a leptospirosis intermediate between "seven-day fever" and true "Weil's disease." In 1931 it was established that the condition was etiologically identical with *akiyami,* or "Autumn fever," a leptospirosis due to *L. autumnalis.*

It will be observed that this picture is almost identical with that found in Queensland and referred to in the reports of previous years.

Speaking of the eyes, the author states*—

> "The majority of cases show, almost as a rule, a distinct hyperæmia of the conjunctiva, which is visible at the onset and gradually passes off after one or two weeks. The grade of hyperæmia is usually more intense in the eyes than on the face, so that, seen from a distance, the vessels of the conjunctiva appear as if done over with red cosmetic. There are no complaints of pains, but there are photophobia and watering of the eyes. Inflammation of the iris and ciliary body are very rare. . . . .
>
> "As a sequel, clouding of the vitreous is met with almost constantly. It usually occurs one to two months after recovery, but occasionally early in the course of the illness or six to twelve months after. The clouding sets in with scintillation (Flimmersehen) with or without interference with vision. It shows objectively a coarse, irregularly shaped, dustlike appearance, not like the fine misty appearance of a syphilitic clouding. The grade of the eye symptoms does not always correspond to the grade of the general condition. We cannot estimate how often vitreous clouding arises, because the mild forms run a very favourable course and clearing follows without treatment. With a thorough ophthalmological examination a positivity of about 90 per cent. might be counted on. Iritis, uveitis, and cataract are met with only in isolated cases."

Inquiries from Japan revealed the fact that permanent injury was unknown and that all such cases tended to complete recovery within two years at the most.

The Queensland patient referred to specifically above was a male, aged twenty-seven, born in Sicily, who had been in Australia thirteen years and had worked as canecutter, cane farmer, &c. In July, 1936, he suffered from a leptospirosis (Zanoni type) which incapacitated him in all for twenty-two days. On 22nd December, 1936, he stated that his vision had been failing since the date of the disease, and on examination a medical eye specialist reported:—

> "Right vision 6/9ths. Left vision 6/60ths. Right fundus normal. Left fundus marked optic neuroretinitis and many large opacities in the vitreous."

The specialist was apparently of the opinion that the left eye was permanently ruined.

On the 18th January, 1937, the patient stated that his right vision was failing, and on examination it was found 6/18ths. The right vitreous was full of fine opacities and there was a mild degree of optic neuritis reported. In the left eye there was still a large number of vitreous opacities and some optic neuritis, but the condition had cleared up a good deal, and vision was actually 6/24ths.

On the 27th January, 1937, the left vision was reported as "clouded over with numerous retinal hæmorrhages around the left disc, involving the macula."

On the 10th March, 1937, a second medical eye specialist stated that the right vision had become less than 6/60ths owing to the presence of coarse and fine opacities in the vitreous. *The left eye, however, had improved to 6/18ths.* A ring of pigment spots on the anterior surface of the lens indicated a former attack of iritis. Extensive hæmorrhages with exudate on, or œdema of the retina, particularly above and in the vicinity of the optic disc, produced a picture alarming to the specialist, but there did not appear to him to be any optic atrophy. It was considered that, as regard vision, the right eye was nearly useless, the left eye reduced to about 50 per cent. of normal capacity, and the prognosis doubtful. "It is possible for the condition to clear up with little permanent harm in the left eye, but the probability seems to be of *considerable permanent defect in both eyes.*"

The patient was then referred further to a medical practitioner, who on 3rd June, 1937, stated—

> "He has very marked diminution of vision, the right eye being *quite useless,* and there is an *appreciable amount of permanent damage in the left eye.*"

At this stage and on these opinions, it was thought that permanent incapacity, with probable blindness in the right eye and very greatly reduced vision in the left eye, might be accepted as a basis for finalisation of the case, and compensation might be provided accordingly.

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* Translation.

On reference to this Department, however, it was strongly urged that a further period of observation be permitted before any decision of this kind should be made. Examination of the patient here showed certain hopeful signs, in particular marked activity of the eye reflexes, and also the fact that his condition was now entirely different from that observed in December, 1936, and then regarded as likely to be permanent.

The left eye, which had previously been the worse, was now markedly superior to the right eye. On examination, no permanent injury of the macula was observable, although it certainly had a mottled appearance.

The long-continued nature of the case had had an effect upon the man's mentality, and his desire for compensation had now become the uppermost factor. Whereas, up to that stage, his answers had been ready and reliable, he now began to complain of a depreciation of sight which various tests indicated to be doubtful.

Accordingly, the longer period of observation asked for by this Department was authorised by the State Insurance Commissioner, and several months later—on 25th February, 1938—a careful examination of the patient was made and the evidence reviewed. Whereas on 26th May, 1937, it had been reported that the macula had suffered great harm, and that recovery of useful vision in the *right* eye was very unlikely, and that, at that stage, it was "industrially useless," and that the *left* eye had a disability of about 50 per cent., the further period of observation had enabled the right eye to recover so that the patient read six-twelfths, while with the left eye he read six-ninths. The patient therefore suffered a disability which could at that juncture be estimated as very little affecting his industrial capability.

The outstanding point of importance was the very marked betterment that had occurred and the entirely erroneous impression that might have been drawn from the forecasts of gross permanent damage put forward at earlier dates.

Subsequent to the examination on 25th February, 1938, it was noticed that the patient, when unaware of observation, showed no visual uncertainty whatever, but an occasional and astonishing visual acuity quite equal to that of normal persons.

(It is interesting to note that on 13th April, 1937, this patient appeared in the Police Court on a charge of obtaining money by false pretences and was fined £8, to include restitution of £5 to the complainant, in default imprisonment for six weeks. On 9th July, 1938, he pleaded guilty to pretending that he could sell cocaine, and obtaining money on false pretences for that purpose. He was sentenced to imprisonment for three months on each of two charges, the terms to be cumulative.)

TYPHOID FEVER.

During the year there were reported 78 cases, of which 30 were in the Greater Brisbane area and 48 in outside areas, as against 50 and 40 cases respectively in 1936-37.

In the neighbourhood of Gympie a series of cases provided certain features of interest. A case (K) was admitted to the Gympie General Hospital from the house of AB. The occupants of the house were AB and wife, CD, and EF. One man (GH) had recently left for Gayndah. The house was situated at the head of a gully on a pineapple plantation, and a running creek drains into Amamoor Creek half a mile above that township. AB was absent, but his wife stated that she had been treated for typhoid ten or twelve years ago. Five years ago, a man (XY) was treated for typhoid at the Gympie Hospital, after having worked on the plantation for about twelve months. Two years ago AB himself was treated at the hospital for (?) Weil's disease, but all tests were negative. In January, 1938, CD was treated at the Gympie Hospital for similar symptoms as those complained of by K. K became ill ten days after his arrival at AB's house and was ill seven days before going to hospital.

About the same time IL, living a quarter of a mile below AB's house, was put in hospital as a case of (?) jaundice, and subsequently developed typhoid with bowel hæmorrhage. In view of AB's attack of (?) Weil's disease, negative to test, it is interesting to note that IL was admitted to hospital with a marked icteric tinge and bile in the urine, and is certainly a typhoid case.

Acting on the assumption that AB or his wife might be a carrier, a series of examinations was made. AB and his wife were both found positive, and an investigation demonstrated that another contact (MN), who had suffered from an undiagnosed disease, at an earlier date, was also positive.

The case IL, who lives some distance from the house containing the carriers, stated he had drunk the creek water unboiled for some weeks.

The public have been notified of the danger of infection in the locality, and steps have been taken to deal with the carriers.

ANTERIOR POLIOMYELITIS.

The outstanding incident in respect of communicable diseases was the epidemic of infantile paralysis which affected the eastern States of the Commonwealth with great violence.

The disease appears to have been transferred originally from New Zealand to Victoria by shipboard contact, and the epidemic established itself with greater violence in that State than ever previously known in the history of the Commonwealth.

It was anticipated that the disease, as in previous years, would ultimately spread to Queensland. At the first reports of the occurrence of the disease in Victoria, therefore, a consultative committee was convened by the Minister and met on Monday, 23rd August, 1937. Particular attention was devoted to an article appearing in the *Medical Journal of Australia* of 21st August, 1937, at pages 327/8.

The matter of nasal spraying and other prophylactic anticipatory measures was discussed very fully, and protective provisions were laid down in accordance with the best information available not only in Australia but following the recent extensive epidemic in California, U.S.A.

It was recognised that no precautions as to quarantine of the land or sea borders avail to keep the disease out. Therefore, although these measures were employed in several instances elsewhere at very great cost, they were not instituted in Queensland.

It was decided also that nasal spraying on any adequate plan was impracticable, apart from its doubtful utility.

The measures ultimately taken resolved themselves, therefore, into the immediate control of every case or suspected case, together with all contacts, irrespective of age or sex. Wherever a case occurred or was suspected, it was immediately removed to an infectious diseases hospital, and all contacts were isolated until the diagnosis was definitely positive or definitely negative. Isolation of the contacts was continued or relaxed accordingly. No home isolation of actual cases was permitted.

In respect of the closing of schools and all places of amusement generally, it was recognised that experience in the past has not indicated that these measures are of any value when an epidemic has established itself, but, on the other hand, introduced in advance, it was considered that they might serve materially to delay the mass transference of the disease from person to person, and that this might minimise the virulence of the epidemic. It was accordingly decided that wherever a case occurred under conditions indicative of epidemic spread, the school should be closed if the patient was a school child; and that places of amusement and entertainment, particularly enclosed theatres and swimming baths, should be prohibited to children under sixteen.

Arrangements were also made for broadcasts at fixed times in order that the public might receive adequate information as to any precautions that were necessary, and might be protected from false information likely to produce panic. The broadcasting stations and the newspapers readily agreed to avoid anything that might provoke popular distress or anxiety, and devoted particular attention to minimising scare headlines, or presenting the information regarding the disease with an emphasis not justified by the actual circumstances. It is pleasing to report that the fullest co-operation was provided by all concerned. This co-operation is deeply appreciated.

As cases increased in number, the distribution of the disease was closely watched from suburb to suburb, and ultimately through the outer suburbs to the adjacent extra-metropolitan area. To a large extent, it was possible to watch and even to anticipate in general terms the course taken.

The restrictions imposed upon cases and contacts, being of a nature unprecedented in experience here, or, so far as is known, elsewhere, were made the subject of careful observation and record.

It was essential that the diagnosis should be as accurate as possible, since in previous epidemics there has been observed everywhere a tendency for many kinds of disorders to be erroneously reported as infantile paralysis. The procedure in Queensland was, therefore, directed towards meeting both necessities by the restriction of executive function in this regard to authorised persons. In other words, Government consultants were appointed, who examined every suspect reported, and watched the patient until the diagnosis was either definitely negative or definitely positive. Only these officers were permitted to institute action, and all cases were directly watched by the Central Office in Brisbane, which arranged that, if necessary, a laboratory unit should visit and examine each patient at the bedside.

The Mobile Unit which was instituted at the Central Office about eighteen months ago further proved its worth during the epidemic. Officers were able to proceed by train, by motor, or by aeroplane to outlying districts and to advise and assist Local Authorities in respect of necessary procedure. Amongst others, the towns of Ayr, Rockhampton, Townsville, Maryborough, Mackay, Mundubbera, Innisfail, Cairns, Eidsvold, Proserpine, Dalby, Hughenden, Longreach, and Alpha were thus visited.

In respect of the closure of schools, the procedure undertaken in the first instance to retard the rapidity of spread was that the whole household of the positive case was placed in isolation, all classmates were restricted to their homes and visited daily by a nurse of the School Health Services Branch, and all other children of the school were forbidden to attend that or any other school for twenty-one days. The positive case was, as mentioned previously, removed to an infectious diseases hospital. As the epidemic proceeded and a vast amount of occult immunisation doubtless resulted, it was felt that these measures could be relaxed. Only the class in which a case occurred was closed, though all members of the family continued to be isolated under surveillance. Infant schools, however, and small schools in rural districts, where opportunities for natural immunisation had been relatively fewer, were completely closed whenever affected, and the relaxation otherwise observed in city schools was not extended to these.

It is recognised that there are many incidental factors that make or break an epidemic, but careful consideration of the facts of the recent cases in Queensland indicate that the measures instituted were certainly effective in instituting a space factor that slowed the spread of the disease. Not only did the epidemic last two months longer than previous epidemics, but the case incidence was materially slowed, and small in total amount. Whereas, for example, in Victoria, with a population of approximately 1,856,000, there were over 2,000 cases (say, 1 in every 900 persons), and in Tasmania, with a population of approximately 232,000, there were over 900 reported cases (say, the enormous total of 1 in every 250 people), in Queensland, with slightly more than half the population of Victoria, there were 160 cases (say, 1 in 6,250 people), and in Brisbane with a population nearly 50 per cent. greater than that of all Tasmania, there were only 57 cases in all.

The death rate varied from 6 to 10 per cent. at different stages of the epidemic in different States. In Queensland, of 160 cases, there were 13 deaths, or 8 per cent., several of these occurring in adults.

The age distribution of the cases is as follows:—

TABLE XIV.

ANALYSIS OF ANTERIOR POLIOMYELITIS FIGURES.

(The following figures are dissected in age and sex groups.)

Age—Years.	Area and Sex.								
	Greater Brisbane.			Extra Metropolitan.			State.		
	M.	F.		M.	F.		M.	F.	Total
Unknown	..	1		1	..		1	1	2
Under 1	..	..		1	2		1	2	3
1	..	..		1	..		1	..	1
1 to 2	2	3		4	2		6	5	11
2 to 3	2	3		1	4		3	7	10
3 to 4	3	..		2	2		5	2	7
4 to 5	5	7	(26)	4	3	(27)	9	10	19
5 to 6	4	2		3	3		7	5	12
6 to 7	2	..		5	2		7	2	9
7 to 8	1	..		3	..		4	..	4
8 to 9	5	1		4	4		9	5	14
9 to 10	1	..		5	6		6	6	12
10 to 11	2	1	(19)	1	2	(38)	3	3	6
11 to 12	..	1		1	..		1	1	2
12 to 13	..	1		3	..		3	1	4
13 to 14	3	..		1	3		4	3	7
14 to 15	1	2		3	..		4	2	6
15 to 16	..	..	(8)	5	..	(16)	5	..	5
16 to 17	1	..		..	2		1	2	3
17 to 18	..	..		1	1		1	1	2
18 to 19	..	..		..	3		..	3	3
19 to 20	..	..		3	..		3	..	3
20 to 21	1	..		..	..		1	..	1
21 to 22	..	..		..	1		..	1	1
22 to 23	..	..		1	1		1	1	2
23 to 24	..	..		..	..		..	..	..
24 to 25	..	..		..	1		..	1	1
25 to 26	..	..		..	..		..	..	..
26 to 27	..	..		1	..		1	..	1
31 to 32	..	..		2	..		2	..	2
32 to 33	..	..		..	1		..	1	1
34 to 35	..	..		..	2		..	2	2
39 to 40	1	..		1	..		2	..	2
43 to 44	..	1	(4)	1	..	(22)	1	1	2
Totals	34	23	=(57)	58	45	=(103)	92	68	(160)

The locality distribution of the cases by towns was as follows:—

TABLE XV.

Locality Distribution of Cases.

Metropolitan.

Suburb.	Cases.	Suburb.	Cases.
Belmont	1	Corinda	1
Chermside	1	Cribb Island	1
Coorparoo	3	Eagle Junction	1
East Brisbane	2	Enoggera	1
Eight-mile Plains	1	Greenslopes	1
Hendra	2	Highgate Hill	1
Indooroopilly	2	Kedron	1
Kangaroo Point	4	Lota	1
Mount Gravatt	2	Manly	1
Milton	1	New Farm	2
Northgate	1	Norman Park	3
Oxley	1	Petrie Terrace	1
Sandgate	3	Sherwood	1
Stone's Corner	1	Spring Hill	3
Sunnybank	1	Taringa	1
Teneriffe	1	Valley	1
West End	1	Whinstanes	1
Windsor	1	Wynnum	4
Woolloongabba	1	Zillmere	1
Total Metropolitan Cases			57

TABLE XVI.

Locality Distribution of Cases.

Country.

Town.	Cases.	Town.	Cases.
Alpha	1	Ayr	2
Biloela	1	Badamarine Creek	1
Babinda	1	Beaudesert	3
Cairns	4	Cushni (near Wondai)	4
Coolangatta	1	Dalby	3
Cherbourg	1	Eidsvold	3
Goodwood	1	Goomeri	3
Gladstone	1	Greenmount (Cambooya)	1
Greenbank	1	Georgetown	1
Home Creek (near Wondai)	1	Herberton	1
Hughenden	2	Kolijo	1
Longreach	2	Karragarra Island	3
Kulpi	1	Marburg	1
Maleny	1	Mackay	3
Manyung (Wondai Shire)	2	Mundubbera	4
Monto	1	Middleton (*via* Winton)	2
Murgon	2	Maryborough	1
Proserpine	2	Pleystowe	1
Pimpama Island	1	Rockhampton	9
Springsure	1	St. George	2
Townsville	13	Toowoomba	7
Warwick	2	Wowan	1
Woorabinda Settlement	1	Wondai	1
Yeppoon	1		
Total Country Cases	103		

The occurrence of cases in the first quinquennium of life—nought to five years—was somewhat too low to be entirely satisfactory, and perhaps indicates that the measures so successfully introduced may have left a larger residuum of non-immune children than is desirable. It is thought that the process of natural immunisation during school life may correct this deficiency if it exists, though a possible recurrence of the disease with the return of summer has not been overlooked.

Early reports from Victoria indicated that many cases of the disease were of the respiratory type with bulbar paralysis and rapid death. Arrangements were therefore made for a supply of electrically-driven respirators, some of the Bragg-Paull type and some being modifications of the Drinker method. Provision was also made for transfer of respirators by aeroplane where necessary. Fortunately, the call upon this type of equipment was never greater than the available supply.

To institute measures such as those outlined above, it is obviously necessary that State-wide power must be utilised. In Queensland a greater measure of authority has been passed to Local Authorities than elsewhere, and the co-operation of these bodies was naturally an essential to success. They responded nobly to the challenge. There was no instance in which a Local Authority failed to put itself and its officers at the disposal of the central authority immediately, or to take every necessary means for protecting the people and dealing adequately with the sick. In each instance the situation was covered for purposes of jurisdiction by the proclamation of a state of emergency, with the issue of relevant orders by the Director-General, confirmed by the Minister, and their renewal from time to time.

The isolation of school contacts was made the responsibility of the children themselves, their parents or guardians, and the school authorities. Several breaches were made the subject of successful prosecution. With these exceptions, however, the co-operation of the public was most willing and most satisfactory.

A special note should also be made of the activities of the Government consultants appointed. While it would be invidious to draw distinction between those who so readily contributed their services, the extent of the demand in Brisbane, as against other localities, permits the particular mention of the excellent work done in this city by Dr. Alex. Paterson. Similarly the extent of the services contributed by the City Medical Officer of the Brisbane City Council (Dr. Ralph Weaver) was outstanding. But for his help the problem would almost have been doubled.

Greater than the immediate problem of the epidemic is the residual problem of after-care and treatment. A roster has been prepared of all persons affected, showing the progress of each case and the amount of paralysis remaining, if any. After-care is a matter for the hospital authority under *"The Hospitals Act of* 1936," as it is for all other diseases, but special provision and facilities have been made available by the Government and are being developed in conjunction.

LEAD POISONING AND NEPHRITIS.

Fifty years ago attention was directed to the problem of lead poisoning in children, occurring in Brisbane. The late Dr. Hopkins made a suggestion that it was possibly due to the absorption of soluble lead from white lead paint with which, in those days, as now, the wooden buildings of Brisbane were liberally coated.

Largely as a result of the activities of Drs. A. Jefferis Turner and W. Lockhart Gibson, the attention of the medical profession was devoted to this menace to health, and restrictions were introduced with regard to the painting of outside walls of buildings, &c., and other surfaces within the reach of children.

Undoubtedly, factors other than desiccated paint were involved, for the disease practically disappeared about 1922 in spite of the fact that an examination made in 1930-32 indicated that the vast majority of houses in Brisbane were still painted with white lead paint, and that in some 90 per cent. of them soluble lead was still apparent on the walls within reach of children. Moreover, though the universality of lead in the air and dust in such houses indicated that it must be taken up by a large proportion of the population, the proportion showing clinical symptoms of lead poisoning was extremely small.

The suggestion that this was due to the fact that lead poisoning was confined to nail-biters, who were presumed to take up large quantities of lead from beneath the finger nails, has never seemed adequate, apart from the fact that the nails of nail-biters are usually bitten to the quick and provide little lodgment for lead.

The situation was complicated by the knowledge that certain of the waters in Brisbane were markedly plumbisolvent, and that these waters had represented the main source of supply in the period during which lead poisoning was frequently observed. The lead incidence dropped enormously with the increased use of the hard water of the Stanley River (13 to 22 degrees hardness—Clark), the soft and the hard waters being reticulated through the same pipes, and the hardness of the water being obvious now throughout the whole area of reticulation. On the other hand some areas solely supplied with hard water from the beginning showed cases.

It was suggested by the present writer in 1930 that the problem was probably, to some extent, one of dietetic calcium deficiency, and that, whereas lead ingested by the great majority of the children of the area was excreted in the fæces or combined with the calcium in the bones, where this combination was impossible owing to a shortage of calcium, lead circulated free in the blood-vessels and damaged both the intima of the vessels and the kidneys themselves. This theory—then, it is believed, propounded here for the first time—has gained considerable confirmation since. It is interesting to note that both vegetables and milk were poor in quality and scarce at earlier periods, and that about the time the incidence of lead in children dropped markedly both became more readily available, and the milk supply was, for the first time, regulated and improved.

Some time ago, in response to strong representations made by medical men and others on the ground that lead poisoning was frequent and that deaths from nephritis (fifteen to thirty years after infantile lead poisoning) were very frequent in Queensland, the measures against lead were intensified. Cases of lead poisoning have also for some years been notifiable.

During the whole period of the intensive investigation undertaken by the writer—from 1930 to 1932—not one new case of lead poisoning was brought to notice, though many medical men were on the lookout to demonstrate such cases.

It is interesting to note, as will be seen from the figures in previous tables, that in spite of reputed frequency no case of lead poisoning whatever has been notified during recent years.

Lead paint is still somewhat commonly used, although the restrictions have been more rigidly policed recently. The gospel of milk has been preached most enthusiastically, and much work has been done on nutrition and dietetics. Perhaps these factors have had a marked effect.

In the Department an investigation has now been undertaken, with the assistance of the National Health and Medical Research Council of the Commonwealth, to determine the effect of different diets and different waters, in combination with soluble lead salts, on experimental animals.

Histological examination of the kidney under such conditions is also being carried forward.

SECTION OF ENTHETIC DISEASES.

Officer for Venereal Diseases: GEOFFREY HAYES, M.B., Ch.M.
Part-time Medical Officer (Females): BEATRICE WARNER, M.B., B.S.

The following particulars indicate the work carried out in connection with the control of venereal disease for the current year under the relevant sections of *"The Health Act of 1937."*

Definition.—For the purpose of the Health Act, the term "venereal disease" includes gonorrhœa, *ophthalmia neonatorum* (gonorrhœal), syphilis (all stages), soft chancre, ulcerative granuloma, and venereal warts. (It should be noted that "gleet" is not notifiable in Queensland as it is in certain other States.)

Incidence.

Notifications.—During the twelve months under review 1,256 persons were notified (anonymously) as suffering from venereal disease, as compared with 1,211 for the previous twelve months. As some of the patients had more than one co-existent infection, they represented 1,263 distinct infections with venereal disease, as compared with 1,214 during 1936-37.

Syphilis.—One hundred and eighty-four of these infections were syphilitic, as compared with 187 in 1936-37. Recently acquired syphilis (primary and secondary) accounted for 56 of these, as compared with 44 cases for the previous twelve months.

Gonorrhœa.—One thousand and forty-two of the infections were gonorrhœal (ophthalmia excluded), as compared with 1,011 in 1936-37.

Other Forms of Venereal Disease.—These comprised 24 cases of venereal warts, 6 of ulcerative granuloma (*Granuloma venereum*), 3 of chancroid (*Ulcus molle*), and 4 of gonorrhœal ophthalmia (*O. neonatorum*).

The following table gives a dissection of the notifications received for the twelve months under review:—

TABLE XVII.
Summary of Notifications.

Nature of Disease.	District.	Males.	Females.	Total.	
Single Infections—					
Gonorrhœa—					
Unspecified	Greater Brisbane	17	5	22	68
	Rest of State	38	8	46	
Acute	Greater Brisbane	514	123	637	784
	Rest of State	119	28	147	
Sub-acute	Greater Brisbane	18	61	79	99
	Rest of State	15	5	20	
Chronic	Greater Brisbane	25	26	51	64
	Rest of State	12	1	13	
Vulvo-vaginitis	Greater Brisbane	..	17	17	21
	Rest of State	..	4	4	
Ophthalmia neonatorum	Greater Brisbane	2	1	3	3
	Rest of State	..	..	..	
Syphilis—					
Unspecified	Greater Brisbane	..	..	..	3
	Rest of State	2	1	3	
Primary	Greater Brisbane	15	4	19	25
	Rest of State	5	1	6	
Secondary	Greater Brisbane	8	5	13	31
	Rest of State	14	4	18	
Tertiary	Greater Brisbane	28	20	48	82
	Rest of State	18	16	34	
Latent	Greater Brisbane	11	10	21	23
	Rest of State	1	1	2	
Neurosyphilis	Greater Brisbane	5	..	5	10
	Rest of State	3	2	5	
Congenital (Heredo-syphilis)	Greater Brisbane	1	2	3	7
	Rest of State	2	2	4	
Soft Chancre (*Ulcus molle*)	Greater Brisbane	2	..	2	2
	Rest of State	..	..	..	
Ulcerative Granuloma	Greater Brisbane	..	..	..	6
	Rest of State	3	3	6	
Venereal Warts	Greater Brisbane	16	3	19	21
	Rest of State	2	..	2	
Double Infections—					
Vulvo-vaginitis and Ophthalmia neonatorum	Greater Brisbane	..	..	..	1
	Rest of State	..	1	1	
Gonorrhœa and Venereal Warts	Greater Brisbane	..	2	2	3
	Rest of State	..	1	1	
Gonorrhœa and Latent Syphilis	Greater Brisbane	1	..	1	2
	Rest of State	1	..	1	
Soft Chancre and Latent Syphilis	Greater Brisbane	..	..	..	1
	Rest of State	1	..	1	
Totals	Greater Brisbane	663	279	942	1,256
	Rest of State	236	78	314	
	Whole State	899	357	1,256	

The following tables gives the incidence of notified V.D. infections per 10,000 of population. It must be remembered, however, that, owing to the social and intimate nature of these diseases, such figures certainly do not reveal the true position:—

XVIII.

Incidence of Notified Venereal Disease for past Five Years.

Year.	Total Cases Notified.	Individual Groups.			Mean Population.	Rate per 10,000 Mean Population.		
		Syphilis.	Gonorrhœa.	Other V.D.		Syphilis.	Gonorrhœa.	Other V.D.
1933–34	1,606	366	1,216	14	950,351	3·85	12·79	0·14
1934–35	1,293	246	1,016	31	960,859	2·56	10·57	0·32
1935–36	1,130	124	994	12	972,190	1·27	10·22	0·12
1936–37	1,214	187	1,011	16	992,091	1·87	10·29	0·16
1937–38	1,263	184	1,042	37	Not available.	..	..	..

Ratio of Notified Venereal Disease Infections for past Five Years.

Year	Ratio of Males to Females.		Ratio of Gonorrhœa to Syphilis (Both Sexes).
	Gonorrhœa.	Syphilis.	
1933–34	2·74	1·45	3·31
1934–35	3·14	1·59	4·1
1935–36	3·14	1·64	3·01
1936–37	3·13	1·8	5·3
1937–38	2·69	1·72	5·66

Sources of Notification.—Of the total notifications received 22·5 per cent. were by private practitioners, as compared with 29·2 per cent. last year. The actual figures are shown in the table:—

TABLE XIX.

Treatment Centre.	Greater Brisbane.	Rest of State	Totals.
Clinics	538	96	634
Private practitioners	202	81	283
Hospitals (other than Clinics)	202	137	339
Totals	942	314	1,256

Stated Sources of Infection.—The following table gives the sources of infection as stated by the patients, and due allowance must be made for their truthfulness. At the clinics in Brisbane we are sometimes able, as a result of this information, to induce the infecting party to report for treatment:—

TABLE XX.

Infections ascribed to—	Area.		Totals.
	Greater Brisbane.	Rest of State.	
Prostitutes in houses	10	17	27
Prostitutes unknown	68	37	105
Non-professionals	364	59	423
Husbands	6	4	10
Wives	17	2	19
Parents	4	..	4
Occupational (prostitute)	33	12	45
Gins, half-castes, &c.	..	9	9
Extragenital (accidental)	3	1	4
Unknown or unstated	437	173	610
Totals	942	314	1,256

Defaulters.—During the twelve months there were 212 notifications of default from treatment and, as a result of action, 139 resumptions of treatment to 30th June.

TABLE XXI.

—	Male Clinic (Hope Street).	Other than Hope Street.		State Totals.
		M.	F.	
Defaulters—	*		†	
Notified	152	12	48	212
Resumed treatment	96	8	35	139
Not located	41	4	8	53
Left State	12	..	1	13
Not finalised	2	..	3	5

* Includes 4 carried over from 1936-37.
† Includes 6 carried over from 1936-37.

CLINICS.

In Brisbane, out-patient treatment is available at two *ad hoc* clinics—males in Hope Street, females in William Street. Where in-patient treatment is necessary, cases can be referred and admitted to the General Hospital, but in doing so pass from the care of the medical officers in the clinics, so that both continuity of records and continuity of interest is lost.

Male Clinic (Hope Street), Brisbane.—During the year this centre was enlarged by the addition of an extra room, and was repainted.

The following table gives a fairly comprehensive dissection of activities in the Hope Street clinic during the year under review:—

TABLE XXII.

MALE CLINIC OPERATIONS, 1937-38.

Patients carried forward from 1937–38		253
New patients registered in 1937–38		764
Total patients attended to 1937–38		1,017
Patients finalised during 1936–37—		
(*a*) Discharged or written off	656	
(*b*) Transferred	29	
		685
Remaining under investigation or treatment on 30th June, 1938		332
Cases diagnosed as venereal disease up to 30th June, 1938—		
Gonorrhœa—		
Acute		381
Sub-acute		14
Chronic		29
Syphilis—		
Primary		14
Early Secondary		2
Late Secondary		1
Tertiary		9
Latent		11
Neurosyphilis		4
Venereal Warts		15
Chancroid		2
Total		482
Interviews and consultations with Medical Officer		9,829
Blood specimens submitted to Laboratories—		
Wassermann and Kline tests (Syphilis)		1,054
Complement Fixation (Gonorrhœa)		725
Smears taken and submitted to Laboratories		2,639
Smears taken and examined in Clinic		53
Dark ground examination performed in Clinic		20
Injections—		
(*a*) Arsenical		886
(*b*) Heavy metal (mostly Bi)		780
(*c*) Others (vaccines, serums, non-specific therapy, &c.)		338
Prescriptions dispensed (part-time chemist)		2,855
Seamen (Brussels agreement)—		
Consultations and treatment		50
Personal cards issued		15

Female Clinics (William Street), Brisbane.—All treatment is carried out at this institution by a female staff, comprising the Medical Officer (part-time) and three nurses, who also attend to the care and treatment of patients in the Venereal Isolation Hospital. The fact that quite a considerable percentage of female patients also have rectal gonorrhœa has been proved in this clinic, and has meant a considerable amount of extra work.

A short summary of operations with some figures for previous years is shown:—

TABLE XXIII.

FEMALE CLINIC ACTIVITIES.

—	1937-38.	1936-37.	1935-36.	1934-35.	1933-34.
Attendances	3,605	2,616	1,857	1,492	2,351
New cases	143	142	135	115	142
Notified (Venereal)	124	97	81	50	73
Injections—					
Arsenical	325	349	291	260	515
Bismuth	286	224	310	321	407
Others	69	..	..	..	..
Local treatments	2,948	1,991	1,244	937	1,396

Among prostitutes the incidence of infection is apparently much higher in the city than in the country towns, as would be expected.

The following table bears out these points:—

TABLE XXIV.

EXAMINATION OF PROSTITUTES.

Year.	Greater Brisbane.		Rest of State.	
	Examined.	Found Infected.	Examined.	Found Infected.
1930–31	892	71	944	34
1931–32	845	68	956	34
1932–33	637	72	716	25
1933–34	665	54	713	33
1934–35	524	46	826	32
1935–36	465	55	850	35
1936–37	401	29	798	13
1937–38	379	41	822	15

Venereal Isolation Hospital.—This centre is reserved entirely for the incarceration and treatment of prostitutes found infected at the periodic examinations. The patients come mainly from Brisbane and the closer country towns (Toowoomba), or centres where the in-patient hospital facilities are inadequate. In the other centres accommodation for "lock hospital" treatment is found in the district hospitals.

The following are the returns for the Venereal Isolation Hospital, Park Road:—

Admissions, 1937–38.		Discharges, 1937–38.	
Remaining from 1936–37	9	Discharged clean	38
Ex Country centres	2	Transferred to General Hospital	6
Ex Brisbane	35	Inpatients on 30–6–38	2
	46		46

INVESTIGATIONS (METROPOLITAN CLINICS).

Gonorrhœa.—During the past twelve months the sulphonamide group of drugs has been given an extensive trial, and there is no doubt that this therapy represents a big step forward in the treatment of gonorrhœa. There are, however, two great dangers:—

(1) The drug is very potent and, if not given under close medical supervision, can be very dangerous. It is not a drug for safe self-medication.

(2) The remarkably ready disappearance of the clinical signs in about 80 per cent. of cases may lead to a too-ready belief in cure, and the patient may remain potentially infectious, although apparently cured. The tests for cure after sulphonamide therapy should be very searching and thorough.

Syphilis.—There are two difficulties to contend with in our clinics:—

(1) The lack of a few hospital beds where cases of neuro-syphilis can be further investigated; and

(2) The fact that serological tests are of doubtful finality.

Lymphogranuloma inguinale.—In the last report we referred to the fact that clinically this "sixth venereal disease" had been diagnosed at the Hope Street Clinic, and that we had secured some Frei antigen to confirm our suspicions by a specific test. So far we have not been able to trace any of our old cases, but certain cases of rectal stricture (an aftermath of L.I.) were reported in Sydney, and the diagnosis of these cases was confirmed by the Frei test with antigen supplied from the Hope Street Clinic. This was apparently the only supply of antigen available at the time in Australia, and it was also probably the first time the diagnosis of the disease had been confirmed by a Frei test.

(At the time of going to press we have been successful in finding one of our old "suspected" cases. This was one which occurred in 1933 and was a typical case of climatic bubo, apparently contracted in Brisbane. The Frei test in this case was definitely positive, with both weak and strong antigen and with a definitely negative control test.)

Now that the infection has been definitely proved in Australia (positive Frei tests in both New South Wales and Queensland), it should be included amongst the notifiable pudendal infectious diseases. It is apparently not uncommon—probably occurring more frequently than chancroid (*Ulcus molle*)—and the sequelæ can be very disabling and serious. (Chronic ulceration and stricture of the rectum, elephantiasis, and even central nervous system derangements have been reported.)

In addition to our being the first centre here able to supply Frei antigen, we might mention that Hope Street was probably the first clinic in Australia to experiment with and introduce as a routine, sulphonamide therapy in gonorrhœa. This commenced towards the end of the financial year 1936-37.

At Hope Street we carry out all dark-ground examinations and urgent smears—on the spot and at the time of the patient's actual consultation. Besides the great advantage arising from the medical officer being able to correlate clinical and laboratory findings, it makes possible the immediate institution of appropriate treatment, and is more impressive to the patient.

At the William Street Clinic (females) the prevalence of rectal gonorrhœa has been investigated, with results so uniformly positive that no case is now considered free from infection until a thorough rectal examination has been made, both by visual inspection and stained smears.

SECTION OF MICROBIOLOGY AND PATHOLOGY.

Director: EDWARD HOLBROOK DERRICK, M.D.

Bacteriologist: H. E. BROWN.

Assistant Bacteriologists: H. G. BEARDMORE, J. P. MORRISSEY.

Bacteriologist-in-Charge, Mobile Unit: DAVID WILLIAM JOHNSON, M.B., B.S.

Assistant Bacteriologist, Mobile Unit: D. J. W. SMITH, B.Sc.

The routine work of the year in respect of microbiology and pathology continues under the direction of Dr. Derrick.

The only alteration in the staff during the year has been the appointment of a cadet, on transfer from the Department of Public Works, which brings the lay staff in its service classifications to: One bacteriologist; three assistant bacteriologists; one assistant to bacteriologist; one cadet; two laboratory attendants; one glass-cleaner; two typists.

At the instance of the Director-General, who is the Queensland representative on the National Health and Medical Research Council of Australia, that body, at its meeting in Brisbane in May, 1938, approved of a grant to provide two research appointments working from this laboratory. Dr. W. G. Heaslip, as a full-time Fellow of the Research Council, will further investigate the fevers of North Queensland, with particular reference to the possible vector or vectors; Dr. Graham Croll, as part-time research Fellow, will investigate problems associated with lead poisoning and nephritis, previously mentioned.

The work done in the Laboratory and Microbiology Section during the year, as set out in the statistical summary that follows, again shows a large volume of routine tests and services carried out for the Department, for various hospitals, and for private practitioners. These have been set out as follows:—

STATISTICAL SUMMARY.

No. 1.—Examination of Material for Infectious Diseases.

——	——	Specs. Recd.	Pos.
Diphtheria	Cultures	10,086	1,474
	Direct smears	21	8
	Virulence tests	266	137
Gonorrhœa	Smears	9,322	1,283
	Blood, complement deviation	974	163
Syphilis	Blood—Wassermann reaction	2,768	663
	Blood—Kline test	1,479	427
	Cerebrospinal fluid—Wassermann reaction ..	25	1
	Pericardial fluid	1	..
	Serum—Treponema pallidum	13	2
Leprosy	Smears (human)	1,641	114
	Rats	5	5
Tuberculosis	Sputum	347	69
	Cerebrospinal fluid	2	..
	Urine	3	..
	Fæces	1	..
	Guinea-pig inoculation	5	..
Typhoid and Paratyphoid	Blood (agglutination)	338	39
	Blood culture	1	..
	Urine	234	5
	Fæces	265	10
	Soil	1	..
Typhus	Blood (agglutination)	117	9
Undulant Fever	Blood (agglutination)	194	18
Leptospirosis	Blood (agglutination)	351	79
	Blood (guinea-pig inoculation)	20	3
	Blood culture	45	3
	Urine (dark-ground examination)	16	4
	Urine (guinea-pig inoculation)	26	8
" Q " Fever	Blood (guinea-pig inoculation)	99	43
	Urine (guinea-pig inoculation)	6	1
	Serum (agglutination)	3	3
	Pleural fluid	1	..
Scarlet Fever	Cultures	10	..
Dysentery, Bacillary	Fæces	4	..
Dysentery, Amœbic	Fæces	8	..
Malaria	Blood	33	1

No. 1.—EXAMINATION OF MATERIAL FOR INFECTIOUS DISEASES—*continued.*

——	——	Specs. Recd.	Pos.
Filaria	Blood	236	1
Anthrax	Tissue	1	..
Trichomonas Vaginalis	Smears	3	..
Fungus Infections	Skin scrapings	2	..
	Smears	8	..
Actinomycosis	Smears	2	..
Vincent's Angina	Smears	13	1
	Cultures	3	..
Various Organisms	Pleural fluid	4	..
	Sputum	15	..
	Smears	23	..
	Urine	42	..
	Cultures	8	..
	Blood cultures	21	..
	Cerebrospinal fluid	8	..
	Pus	5	..
	Spleen	3	..
	Liver	1	..
	Joint fluid	2	..
	Nasal smear	1	..
	Tissue	1	..
	Fowl	1	..
	Totals	29,134	4,574

No. 2.—PATHOLOGICAL EXAMINATION.

——	——	Specs. Recd.	Pos.
Blood	Full count	35	..
	Differential count	28	..
	Red Cell count	3	..
	Urea estimation	17	..
	Nitrogen estimation	1	..
	Sugar estimation	7	..
	Basophilia	9	..
	Hæmoglobin	9	..
	Fouchet test	2	..
	Coagulation time	3	..
Urine	Microscopical examination	65	..
	Chemical examination	56	..
	Urea estimation	232	..
	Schistosomiasis	1	..
Fæces	Intestinal worms	487	35
	Occult blood	7	2
Cerebrospinal Fluid	Cells	1	..
	Globulin	2	..
	Sodium chloride	2	..
	Protein	1	..
	Colloidal gold	2	..
Fleas	Identification	328	..
Brain Tissue	Examination	1	..
Heart and Lungs	Examination	2	..
Urinary Calculi	..	1	..
Worms	Identification	4	..
Vomit	Free hydrochloric acid	1	..
Tissue	Section	92	..
	Section (post-mortem)	69	..
	Totals	1,468	37

The ecto-parasites removed from rats by the Brisbane City Council and submitted for identification were classified as follows:—

Xenopsylla cheopis	154
Leptopsylla musculi	167
Ctenocephalus felis	5
Mites	2
	328

No. 3.—Foods, Waters, &c.

—	—	Specs. Recd.	Pos.
Water	Bacterial count	148	..
	Colon bacilli	148	..
	E. typhosa	8	..
Milk	Bacterial count	1,039	..
	Reductase test	575	..
	Undulant fever	2	..
	M. tuberculosis	1	..
	Guinea-pig inoculation (*M. tuberculosis*)	25	2
	Various organisms	35	..
Cream	Bacterial count	1	..
Ice Cream	Bacterial count	8	..
Ice Blocks	Bacterial count	6	..
Oysters	Bacterial count	4	..
Bread	Rope	7	..
Yeast	Rope	1	..
Flour	Rope	3	..
Wheatmeal	Rope	2	..
Corned Beef	Organisms	1	..
	Totals	2,014	2

No. 4.—Various Materials.

Disinfectant—	
Coefficient	8
Bottle—	
Sterility	1
	9

No. 5.—Special Investigations.

Guinea-pig agglutinations	7
Rabbit agglutinations	26
Bandicoot agglutinations	25
Guinea-pig inoculations	1,302
Mouse inoculations	79
Calf inoculations	2
Sheep inoculations	2
Pig inoculations	2
Dog inoculations	2
Rabbit inoculations	9
Bandicoot inoculations	8
Rat inoculations	10
Water-rat inoculation	1
White rat inoculation	1
Rat-kangaroo inoculation	1
Rattus culmorum inoculations	2
Opossum inoculation	1
Cattle spleen for ''Q'' fever	1
Sheep spleen for ''Q'' fever	1
Guinea-pig—Post Mortems	555
Mice—Post Mortems	92
Rat—Post Mortems	11
Bandicoot—Post Mortems	48
Opossum—Post Mortems	4
Snake—Post Mortem	1
Water-rat—Post Mortems	4
Rat-kangaroo—Post Mortem	1
Phascogale—Post Mortems	2
Cockroaches	34

No. 5—Special Investigations—*continued.*

Ecto-parasites—	
Anoplura	1,639
Diptera	30
Siphonaptera	688
Acarina	3,322
Animal tissue for section	112
Human sera sent to Dr. Burnet for "Q" agglutination	298
Animal sera sent to Dr. Burnet for "Q" agglutination	184
Animal kidneys examined for Leptospirosis—	
Bandicoots	50
Rattus culmorum	4
Hydromys chrysogaster	3
Melomys cervinipes	2
Rattus lutreolus	3
Rat-kangaroo	1
Opossums	9
Mice	10
Cattle	20
	8,609

No. 6.—Medico-legal.

Post-mortem examinations	272
Blood—	
Clothing	24
Various articles	17
Seminal stains—	
Clothing	35
Gonorrhœa—	
Smears	6
Spermatozoa—	
Smears	17
Swabs	2
Tissue—	
Section	2
Fœtus	5
Whey	1
	381
Attendances at courts—	
Supreme Court	14
Police Court	15
Coroner's Court	8
Children's Court	1
Industrial Court	2
	40

No. 7.—Vaccines Prepared.

A. Typhoid-Paratyphoid Vaccine—6,247 c.c.s of T.A.B. vaccine were prepared.

B. Autogenous Vaccines were prepared as follows:—

From—	
Cultures	11
Fæces	11
Urine	4
Sputum	5
Pus	5
	36

No. 8.—EXAMINATION OF RODENTS FOR PLAGUE.

Rodents received for examination from Brisbane City Council:—

Rattus norvegicus	18,426
Rattus rattus (*dark phase*)	1,630
Rattus rattus (*light phase*)	2,522
Hydromys chrysogaster	3
Unclassified (very young rats)	2,896
Mus musculus	1,043
	26,520

(In addition to these, 4,977 rats and 1,271 mice were destroyed by the Brisbane City Council without examination.)

Rat smears received from other centres:—

Mackay	901
Bundaberg	870
Maryborough	820
Gympie	65
Ipswich	1,804
Sandgate	655
Wynnum	977
Meat Works (Brisbane area)	501
	6,593

No rat was found infected with *Pasteurella pestis.*

Grand total of examinations for year 1937-38, 74,764.

MATERIAL SUPPLIED.

Four hundred and ninety-four (494) requisitions were supplied during the year to hospitals, private practitioners, and local authorities, consisting of 20,051 swabs, 19,969 cultures, 893 Wright's capsules, 145 water outfits, 276 glass slides, 1,042 fæces tins, 150 urine bottles, 156 blood bottles, 12 blood venules, 9 agar slopes, 6 ccs. + Kline serum, and 2,900 ccs. anterior poliomyelitis serum.

CULTURE MEDIA PREPARED.

	Number of tubes.
Serum cultures—	
Ox serum slopes	22,435
Human serum plates	12
Ordinary broth—	
Small tubes	826
Large tubes (disinfectant)	756
Bottles	41
Ordinary agar—	
Small slopes	724
Large slopes	1,161
Stabs	24
Sugars—	
Lactose	937
Glucose	511
Mannite	125
Inosite	310
Glycerine	85
Dulcite	144
Salacin	153
Xylose	32
Erythrite	50
Arabinose	38
Saccharose	207
Galactose	50

CULTURE MEDIA PREPARED—*continued.*

	Number of tubes.
Dextrin	53
Maltose	197
Adonite	40
Inulin	52
Amygdalin	57
Other tubes and plates—	
Treble Lactose (tubes)	179
Endo's Medium for E. coli (plates)	514
Methyl Red Medium (tubes)	257
Peptone Water for Indol (tubes)	342
Medium for Voges-Proskauer Reaction (tubes)	306
Sodium Citrate Medium (tubes)	293
McConkey's Medium (plates)	1,347
Blood Agar (plates)	5
Gelatin (tubes)	22
20 per cent. Lactose	41
Fletcher's Medium for Leptospira (tubes)	301
Schuffner's Medium for Leptospira (tubes)	1,047
	33,684

	Litres.
Material in bulk—	
Agar (for count purposes)	54
Alepol 6 per cent. solution	640
Alepol 3 per cent. solution	3,320
Kaiserling Solutions No. I.	62
Kaiserling Solutions No. II.	55

ROUTINE LABORATORY WORK.

Diphtheria.—There has been a falling-off in the number of examinations of cultures for diphtheria (10,086 this year, as against 10,946 last year), but there has been an increase in the number of cases where a virulence test has been requested.

Venereal Diseases.—There has been an increase in the number of Wassermann tests from 2,444 to 2,768, and in smears examined for gonococci from 7,353 to 9,322.

Leprosy.—The number of smears examined for leprosy bacilli has increased from 990 last year to 1,641 this year.

Milk.—The number of samples of milk tested for bacterial content increased from 930 last year to 1,039 this year. During the year 575 of these samples were also tested by the methylene blue reductase test. The correspondence between the two tests has been fairly close as a rule, but with occasional samples there was a wide divergence.

A small series of milk samples from the Southport district was tested for tuberculosis by guinea-pig inoculation, and two were found positive.

Plague.—The daily examination of Brisbane rodents for plague has continued, although there is a falling-off in the number sent for examination. Smears of spleens of rats captured in the country have been regularly examined. No plague-infected rat was found, but five rats with leprosy were detected.

A flea census revealed that about half the fleas on Brisbane rats are *Xenopsylla cheopis,* which is in agreement with the results in previous years.

Tissue Sectioning.—There has been a great increase in the histological work; 273 specimens were sectioned, as against 111 last year. One hundred and twelve of these were specimens of tissue from experimental animals in connection with the special research into fevers.

Typhoid Fever.—The special interest in fevers has led to a great increase in the number of serum agglutination tests and in cultures of blood, urine, and fæces. Each sample of serum is tested, as a rule, for agglutination with seven stock cultures—*Eberthella typhosa, Salmonella paratyphi, Salmonella schottmülleri, Proteus* OX 19, *Proteus* OXK, *Brucella abortus,* and *Leptospira pomona.* In some cases a non-motile "O" culture of the typhoid bacillus was used as well as the motile H culture.

The examination of serum, fæces, and urine from contacts of typhoid fever patients resulted in the discovery during the year of three carriers. This has been mentioned in an earlier section.

During the year, 6,247 ccs. of typhoid-paratyphoid vaccine were prepared. Most of it went to the Goodna and Willowburn Mental Hospitals. Consignments also went to Cloncurry and Mount Isa.

In April, 1936, the Ty. 2 strain of *Eberthella typhosa,* containing the Vi antigen of Felix, was used in the preparation of the vaccine instead of the Rawling's strain, which has done duty here for many years. The Ty. 2 culture (as well as other cultures) was obtained from the Lister Institute, London, to whose courtesy we are indebted.

ACTIVITIES OF THE MOBILE UNIT.

During the year the value of the Mobile Unit has been repeatedly demonstrated. Officers were available at short notice for assistance in the diagnosis or investigation of the source of infectious diseases.

The Mobile Unit also undertook, in particular, the investigation of leptospirosis and murine typhus.

1.—VISITS BY MOBILE UNIT.

As well as numerous visits to Brisbane hospitals and suburban houses and the abattoir, twenty-five visits were made to country centres. When diagnosis was a matter of urgency, the aerial services were utilised, and four flights were made during the year.

The details of all visits are shown in the accompanying table:—

TABLE XXV.

EXTRA METROPOLITAN ACTIVITIES OF MOBILE UNIT.

Officer.	Date.	Places Visited.	Purpose of Visit.
	1937—		
D. J. W. Smith	26th to 31st July	Maleny and Kenilworth	Q. fever
D. W. Johnson	12th to 20th August	Mona Mona	Leprosy
D. W. Johnson	24th August	Toogoolawah	Poliomyelitis
D. W. Johnson	2nd September	Gayndah	Poliomyelitis
D. W. Johnson	2nd September	Ipswich	Poliomyelitis
D. W. Johnson	14th to 15th September	Cherbourg	Poliomyelitis
D. W. Johnson	16th September	Booval	Poliomyelitis
D. W. Johnson	26th to 28th September	Maryborough	Poliomyelitis
D. J. W. Smith	27th September to 1st October	Maleny	Q. fever
D. W. Johnson	29th September	Ipswich	Poliomyelitis
D. W. Johnson	30th September	Wondai	Poliomyelitis
D. W. Johnson	15th October	Ipswich	Typhus fever
D. J. W. Smith	17th to 24th October	Cooloolabin	Q. fever
D. W. Johnson	19th to 20th October	Nanango and Kingaroy	Poliomyelitis
D. W. Johnson	26th October	Nambour	Poliomyelitis
D. W. Johnson	4th November	Ipswich	Typhus fever
D. W. Johnson	8th to 9th December	Cherbourg	Poliomyelitis
D. W. Johnson	21st December	Cherbourg	Poliomyelitis
	1938—		
D. J. W. Smith	6th to 14th January	Cooloolabin and Maleny	Q. fever
D. W. Johnson	10th to 15th February	Biloela and Gayndah	Poliomyelitis and leprosy
D. W. Johnson	24th February	Wondai	Poliomyelitis
D. W. Johnson	27th February to 9th March	Mona Mona	Leprosy
D. W. Johnson	11th to 12th April	Warwick	Poliomyelitis
D. W. Johnson	5th to 14th June	Mona Mona	Leprosy
E. H. Derrick	25th June to 1st July	Nambour and Imbil	Q. fever

2.—LEPTOSPIROSIS.

General Review.—The attempt to solve the problem of the short-period group of fevers, has been continued under instruction. The discovery of a mild type of leptospirosis geographically endemic over a wide area in South Queensland was announced in the last annual report. The isolation of the casual leptospira, now called *Leptospira pomona,* has been of the greatest value in the diagnosis of fevers. In this laboratory the leptospiral agglutination test is applied as a routine test to the sera of fever patients. As a result of this routine test, several cases have been diagnosed. The number of leptospiral agglutination tests performed during the year reached the new high total of 409.

New Cases of Pomona-Leptospirosis.—From 1st July, 1937, to 30th June, 1938, fourteen new cases were diagnosed. This brings the total number of proved cases to twenty-three. Some details of the cases are given in the following table:—

TABLE XXVI.

SHOWING DETAILS OF NEW CASES OF POMONA LEPTOSPIROSIS.

No.	Patient.	Sex.	Age.	Occupation.	Domicile.	Date of Onset.	Diagnosed by		
							Blood Culture.	Serum Agglutination Test.	Examination or Inoculation of Urine.
*1	R. K.	M.	17	Piggery hand ..	Woodford ..	1937— — February ..	..	+	..
2	G. L.	M.	..	Dairy farmer ..	Beaudesert ..	30th November ..	..	+	..
3	W. L.	M.	28	Meat inspector ..	Brisbane ..	1938— 11th January ..	..	+	..
4	S. D.	M.	18	Piggery hand ..	Woodford ..	27th February ..	..	+	+
5	A. W.	M.	32	Abattoir worker ..	Brisbane ..	27th February ..	+	+	..
6	S. J.	M.	22	Dairy farmer ..	Beaudesert ..	10th March ..	+	+	..
7	O. B.	M.	32	Abattoir worker ..	Brisbane ..	16th March ..	..	+	..
8	E. Mc.	M.	17	Farm hand	Oakey	27th March ..	..	+	..
9	R. S.	M.	..	Dairy farmer ..	Maleny ..	1st April.. ..	+	..	..
10	C. D.	F.	9	Child on farm ..	Beaudesert ..	16th April ..	..	+	..
11	C. K.	M.	27	Meat inspector ..	Brisbane ..	21st April.. ..	..	+	+
12	C. M.	M.	42	Meat inspector ..	Brisbane ..	3rd May ..	..	+	+
13	H. R.	M.	25	Farm hand	Beenleigh ..	2nd June ..	..	+	..
14	C. C.	M.	47	Farm hand	Woodford ..	10th June ..	..	+	+

* Diagnosed in 1938.

Comments.—A study of this table reveals several interesting features which deserve further discussion. In the first place, all patients were males except one (Case 10), who was a school child, and also lived on a farm. Secondly, nine patients lived or worked on dairy or pig farms, and the other five patients were employed at abattoirs. These facts appear to indicate a high frequency of the disease in association with cattle or pigs, evidently over a wide area of country. During the coming year this question will be further investigated.

Pomona leptospirosis was previously only proved to occur in the Beaudesert and Pomona districts. Additional endemic areas are now known to exist in the Maleny, Oakey, Woodford, and Beenleigh districts. It should be possible to establish the existence of the disease in many other areas in Southern Queensland.

Laboratory Diagnosis.—A feature of the diagnostic aspect has been the success of blood cultures. Three patients were thus diagnosed before the serum agglutination test became positive. Blood is taken in the febrile stage of the disease, and a portion of clot is placed in a tube of Schüffner's medium and incubated. Growth generally occurs in three or four days. The method appears to be equally as reliable as guinea-pig inoculation.

The urine of four patients was positive to dark-ground illumination or guinea-pig inoculation; and three strains isolated from urine are now growing in culture. The period of time during which leptospiræ continue to appear in the urine of patients who have had Pomona leptospirosis has not yet been determined, and is a question that demands further investigation. In one patient (Case 12) the urine was positive to guinea-pig inoculation on the twelfth and nineteenth days after onset of illness, but negative on the twenty-sixth and thirty-third days.

The Carrier of Pomona Leptospirosis.—As the carrier of *Leptospira pomona* is still unknown, the kidneys of many animals were examined by dark-ground illumination during the year. Most of the animals were caught in coastal districts north of Brisbane.

A complete list of these animals, and the result of examination, is given here:—

Animal.	No. Examined.	Result.
Bandicoots (*Isoodon macrourus*)	50	Negative
Rats—		
Rattus culmorum	4	Negative
Hydromys chrysogaster	3	Negative
Melomys cervinipes	2	Negative
Rattus lutreolus	3	Negative
Rat-Kangaroo (*Aepyprymnus rufescens*)	1	Negative
Opossums (*Trichosurus vulpecula*)	9	Negative
Mice (from Kingaroy district)	10	Negative
Cattle (mixed abattoir stock)	20	Negative

In addition, leptospiral agglutination tests were performed on the sera of twenty-three bandicoots, with negative results.

Further animals will be examined as opportunity permits.

The Duration of Pomona Immunity in Guinea-pigs.—An attempt was made to determine the duration of immunity in guinea-pigs inoculated with *Leptospira pomona.*

Three guinea-pigs (G2, G5, and G23) were inoculated with *L. pomona* in July, August, and September, 1936, respectively. Each animal developed a thermal reaction, as shown in Chart I. and exhibited loss of weight, and excreted leptospiræ in the urine.

Between September, 1936, and November, 1937, when this experiment commenced, these three guinea-pigs had increased considerably in weight. Each had been inoculated with "Q" fever, and had subsequently been used for "Q" fever immunity tests. To obviate any possibility of the non-specific immunity mentioned by Pinkerton, no inoculations were made for at least one month prior to reinoculation with *L. pomona.*

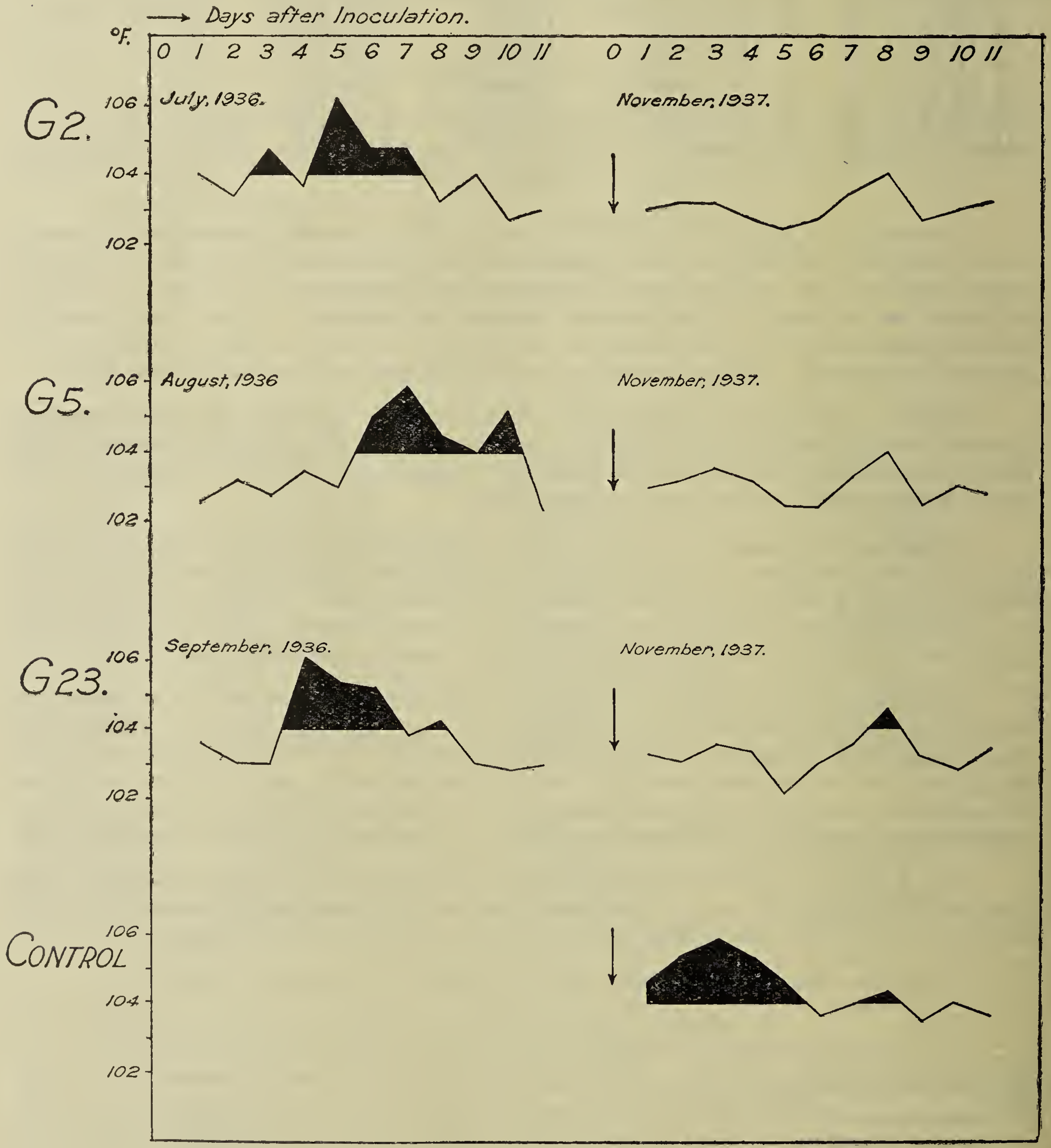

FIGURE IV.—Immunity of Guinea Pigs to Pomona Leptospirosis.

(Showing response of immune guinea-pigs to re-inoculation.)

On 8th November, 1937, four guinea-pigs (G2, G5, G23, and a control) were each inoculated intraperitoneally with 1·0 mil. of liver emulsion containing *L. pomona.* The reactions to this inoculation are shown in Chart I. G2 and G5 failed to react, whilst G5 had one day of fever on the eight day. (As all animal temperatures were elevated on that day, which was hot and humid, this reaction is not regarded as significant). On the other hand, the control animal developed a good thermal reaction.

The control animal lost weight, and developed leptospiruria. Neither G2, G5, or G23 showed any loss of weight, and up to the twenty-seventh day after reinoculation (when observations ceased) none of them excreted leptospiræ in the urine.

The serum agglutination test was performed before and after reinoculation. Before inoculation, the serum showed lysis but no agglutination with *L. pomona* in a dilution of 1 : 10. On the thirty-fifth day after inoculation, the serum showed definite agglutination in a serum dilution of 1 : 100, but not in 1 : 300.

The conclusion may be drawn from this experiment that immunity induced by infection with *L. pomona* is absolute for at least one year in guinea-pigs. In human infections, the immunity induced is probably of very long duration.

Mild Leptospirosis in Southern Queensland.—The following summary is given of an article by D. W. Johnson and H. E. Brown in the *Medical Journal of Australia* of 7th May, 1938. This article deals with the world-classification of *Leptospira pomona,* and describes eight further cases of the disease.

The existence of pathogenic leptospiræ differing serologically from *Leptospira icterohæmorrhagiæ,* is noted. The world distribution of these types is briefly discussed, and attention is drawn to the existence of four distinct types in Australia.

The Pomona type of leptospira, isolated from a human patient in Southern Queensland in 1936, is tentatively classified as a new type.

Eight cases of mild leptospirosis, caused by the Pomona type of leptospira, are reported. Seven of these cases occurred during an epidemic affecting over twenty patients at Beaudesert, Queensland, in March, 1937. The eighth patient became ill at Pomona in January, 1936; but his condition was not diagnosed pathologically until August, 1937. In these eight cases the outstanding clinical features were fever, prostration, severe headache, and generalised muscular pains. Delirium and conjunctival congestion were also noted in several cases. The duration of fever was from three to eight days. Jaundice was not observed, and the mortality was nil. Two patients suffered from pain and swellings in the joints; one patient had a typhus-like rash, and another patient became temporarily blind some two weeks after apparent recovery.

The epidemiology of the Beaudesert outbreak is considered, and the theory is advanced that the probable precipitating factor was a heavy fall of rain about a week before the first patient became ill.

3. TYPHUS FEVER IN A COALMINE.

During October, 1937, cases of fever occurred in five miners employed at the New Chum Colliery, near Ipswich.

For many years this mine has had an unenviable reputation as a focus of enteric fever. Since 1927 no fewer than 37 cases of enteric fever have occurred amongst the miners there. Free inoculation with T.A.B. vaccine was performed in 1931, and again in April, 1937. For various reasons, however, a large number of men were not inoculated. About 80 to 100 miners are employed at the mine.

On 15th October word was received that three miners employed at the New Chum Colliery had been admitted to Ipswich General Hospital. The provisional diagnosis was enteric fever. The hospital was visited, and samples of blood, urine, and fæces were obtained for pathological examination. Two patients had become ill on 4th October, and one on 11th October. Before the end of the month two more employees were admitted to hospital, and these patients were also visited. Of the five miners admitted to hospital, only one had not been inoculated with T.A.B. vaccine.

Clinically, the signs and symptoms in each case were similar, and consisted essentially of fever, headache, and great prostration. The maximum temperature never exceeded 104 deg. F., and the duration of fever was from twelve to eighteen days. A "roseolar" rash was noticed in two patients, and appeared at the end of the first week of fever. The spleen was not enlarged. Bowel action was normal.

All of the patients made a good recovery and returned to work after an absence of approximately one month.

Pathological Investigations.

Blood Culture and Guinea-pig Inoculation.—Blood cultures were attempted if the patient was febrile. On no occasion did growth occur. Guinea-pigs inoculated with clot showed no reaction, even on passage.

Serological Agglutination Tests.—These gave rise to difficulties in interpretation, because four patients had been inoculated with T.A.B. vaccine, two of them as recently as April, 1937. However, by testing serum taken at intervals, and by using "O" (or nonmotile) strains of organisms in emulsions, these difficulties were largely obviated.

Agglutination tests were performed with the five sera against the following organisms:—*E. typhosa* (O) and (H), *S. paratyphi* (H), *S. schottmülleri* (H), *Proteus* X 19 (O), *Proteus* X K (O), *Leptospira icterohæmorrhagiæ* (classical strain).

Four of the sera agglutinated *Proteus* X19 (O) emulsions in a diagnostic titre, thereby establishing a diagnosis of endemic typhus. The serum of the fifth patient, who had been inoculated with T.A.B. vaccine in 1931 and again in 1937, agglutinated *Proteus* OX 19 emulsion partially, but not sufficiently to be diagnostic. On the other hand, his serum (in several samples) agglutinated emulsions of *E. typhosa* in a diagnostic titre. It was difficult to arrive at a diagnosis in this case, but, owing to the failure of his serum to agglutinate *Proteus* OX 19, it was decided to label his as enteric. This diagnosis is regarded as unsatisfactory and doubtful.

Examination of Urine and Fæces.—Urine and fæces were examined bacteriologically on many occasions, but no organisms of the enteric group were isolated.

Examination of Rats from Mine.—Once the diagnosis of "endemic" or "murine typhus" was established, arrangements were made to visit the mine and to obtain rats from the underground portions of the mine.

The visit to the mine yielded no information of particular value regarding typhus, except that several rats were seen. The miners complained that the rats were liable to devour their food if this was left uncovered.

As a result of trapping, seven live rats (*Rattus rattus*) were received at this laboratory between 15th November, 1937, and 8th December, 1937. Poisoning measures were then instituted, and the supply of live rats ceased.

The rats were combed for ectoparasites, and examined for signs of typhus infection. A feature was the high flea count, no less than 214 fleas being obtained from seven rats. *Xenopsylla cheopis* constituted the greater proportion of this number. However, each rat carried seven or eight stick-fast fleas, *Echidnophaga myrmecobii*, firmly attached around the eyes.

An emulsion of spleen and brain from each rat was inoculated into male guinea-pigs. Even on passage, however, no signs of a thermal or scrotal reaction were observed.

Guinea-pigs were inoculated with the fleas and other ectoparasites obtained from the rats. A similar lack of results ensued—all guinea-pigs inoculated failed to react.

An analysis of these disappointing results leads to two possible sources of failure. In the first place, it is improbable that any of the rats examined was infected with endemic typhus virus. The Weil-Felix reaction performed on the serum of these rats was negative in all. Thus the failure to transmit infection from rat brain to guinea-pig is possibly explained.

In the second place, it is possible that none of the fleas inoculated into guinea-pigs contained infective virus. A flea is infective for about four weeks only (Zinsser), and over a fortnight elapsed between the occurrence of the last case and the inoculation of the first batch of fleas.

Should a subsequent outbreak occur, it is hoped to obtain rats and fleas much earlier than on this occasion.

Summary.

Four cases of endemic or murine typhus occurring in coalminers are reported. Previously, in Australia, the only reported cases of endemic typhus have been associated with rats or mice in produce stores, silos, old houses, &c. As many Australian mines are known to be rat-infested, the absence of reported cases of endemic typhus in miners is rather surprising.

4. OTHER ASPECTS OF THE WORK OF MOBILE UNIT.

(1) *Outbreak of Poliomyelitis in Queensland.*—The occurrence of poliomyelitis in Queensland during the year necessitated a good deal of travelling.

In connection with the diagnosis of poliomyelitis, visits were made to Maryborough, Nambour, Kingaroy, Nanango, Murgon (three times), Warwick, Gayndah, Biloela, and Toogoolawah. In addition, many suburbs were visited.

These consultations were invariably welcomed by practitioners. Amongst the diseases diagnosed were cases of tuberculous meningitis, influenzal meningitis, and staphylococcal meningitis.

(2) *Visits to Institutions.*—During the year, several visits were made to the Mental Hospital, Goodna. Work performed on these visits included autopsies on cases of uncertain diagnosis, blood counts, and fæcal examinations An outbreak of dysentery in October, 1937, was proved to be caused by an organism of the Flexner group, probably transmitted by flies.

(3) *Leprosy in Queensland.*—Dr. Johnson made three visits during the year to Mona Mona Mission Station, in connection with a special Commonwealth grant for investigation of leprosy. In addition, he has taken over the medical work at Peel Island Lazaret. All leprosy material sent to the laboratory will be examined by him.

Fuller details of this work will be found in the special section on Leprosy in Queensland in this report.

(4) *"Q" Fever.*—The visits made by the Mobile Unit to investigate "Q" fever are described below.

"Q" Fever Investigations.

The investigation of "Q" fever has been actively prosecuted during the year. The diagnosis of cases has been carried out by the guinea-pig immunity test; ninety-nine febrile patients were investigated by the injection of blood into guinea-pigs, and forty-three reacted with "Q" fever. The urine of six patients was injected, with one positive.

Passage of the "J" strain of "Q" fever virus, which was first obtained in May, 1936, has been continued from guinea-pig to guinea-pig. It has, up to June, 1938, undergone seventy-four passages.

An endeavour has been made to find an animal reservoir of "Q" fever infection, and some success has been met with in the investigation of bandicoots, as described below.

A great number of parasites of many varieties have been tested, but a vector has not yet been incriminated. It is, therefore, still impossible to say how, and under what actual conditions, transmission is effected.

THE AGGLUTINATION TEST FOR "Q" FEVER.

This test has proved most valuable, and has been intensively employed in the diagnosis of fever patients and in making epidemiological surveys. A few tests were made in Brisbane, but the great majority were made at the Walter and Eliza Hall Institute in Melbourne. The closest co-operation in the "Q" fever work was maintained with Dr. Burnet and Miss Freeman, of the Walter and Eliza Hall Institute, and appreciation is expressed for the helpfulness and cordiality of their co-operation.

During the year 482 samples of sera were sent to Melbourne. These included eighty-one from abattoir workers, sixty-five from forestry workers, fifty-eight from Fantome Island aboriginals, and eighty from patients with fever. One hundred and eleven cattle sera, fifty-one bandicoot sera, and twenty-two sera of other animals were tested.

A series of fifty-eight sera from Fantome Island aboriginals was tested, because of a report that these aboriginals were liable to short attacks of fever. All samples were negative. Dr. G. Courtney, Medical Superintendent of the Palm Island Settlement, considers that pulmonary tuberculosis explains a great many of these febrile attacks.

INCIDENCE OF "Q" FEVER.

Up till the end of June, 1938, there had occurred seventy-three cases of "Q" fever proved by laboratory tests. These cases were distributed as follows:—

——	Brisbane.	Country.
1935	3	..
1936	4	2
1937	27	12
1938 (6 months)	16	9
Totals	50	23

The figures for 1935 and 1936 are very incomplete. From the figures for 1937 and 1938 some idea may be obtained of the true frequency of the disease in Brisbane, as probably rather more than half of all cases occurring in Brisbane during that period were investigated. The true frequency in the country would be very much greater than indicated by the figures given above, as the disease is probably widely spread geographically.

In addition, infected bandicoots have been caught at Cowan Cowan, Cooloolabin, and Nambour.

The known endemic centres of "Q" fever are shown in the map on page 41. The chief area affected is that lying between Brisbane and Gympie. It will be noticed that most of this area has an annual rainfall greater than 50 inches.

Most of the farms where "Q" fever occurred are situated in scrub (rain-forest) country. Even the farms affected in the lower rainfall districts of Monto, Murgon, and Kingaroy have scrub adjoining. The association is, however, not complete, for there is no rain-forest at Bribie and Cowan Cowan.

Patient 57 was a meat inspector. He was transferred from Brisbane to Cairns, working last at the Brisbane abattoir on 10th December, 1937. He inspected at a slaughteryard near Cairns till 15th February, 1938, and left next day for Brisbane. His "Q" fever began on 23rd February, 1938. A study of these dates makes it almost certain *that he was infected at Cairns.* To have been infected in Brisbane would imply an incubation period of seventy-five days, which is highly improbable. It is probable, therefore, though not fully established, that "Q" fever is present in North as well as South Queensland.

INVESTIGATION OF BANDICOOTS.

Bandicoots are among the commonest animals of the bush, and, in the search for a reservoir of "Q" fever infection, have early come under investigation. During the year fifty bandicoots were captured—forty-one in the Nambour district, seven on Moreton Island, and one each at Maleny and Imbil. All belonged to the species *Isoodon macrourus.*

The sex and weight of the bandicoots is shown in the accompanying table. The largest was a male weighing 2,577 grams. The largest female weighed 1,706 grams.

TABLE XXVII.

SEX AND WEIGHT OF BANDICOOTS.

Weight (Grams).	Male.	Female.	Total.
0–500	3	2	5
500–1,000	5	8	13
1,000–1,500	3	7	10
1,500–2,000	11	1	12
Over 2,000	9	..	9
Not recorded	..	1	1
Totals	31	19	50

When a bandicoot was received at the laboratory, the usual procedure was to kill it, weigh it, search it for external and internal parasites, take blood from the heart for agglutination tests, weigh and measure the spleen, examine the kidney by dark-ground illumination for leptospiræ, and inject a guinea-pig with a mixed emulsion of spleen, liver, and kidney. Stained smears of blood and spleen from many of them were examined. Thirteen of the bandicoots were kept alive for a time for inoculation or other purposes.

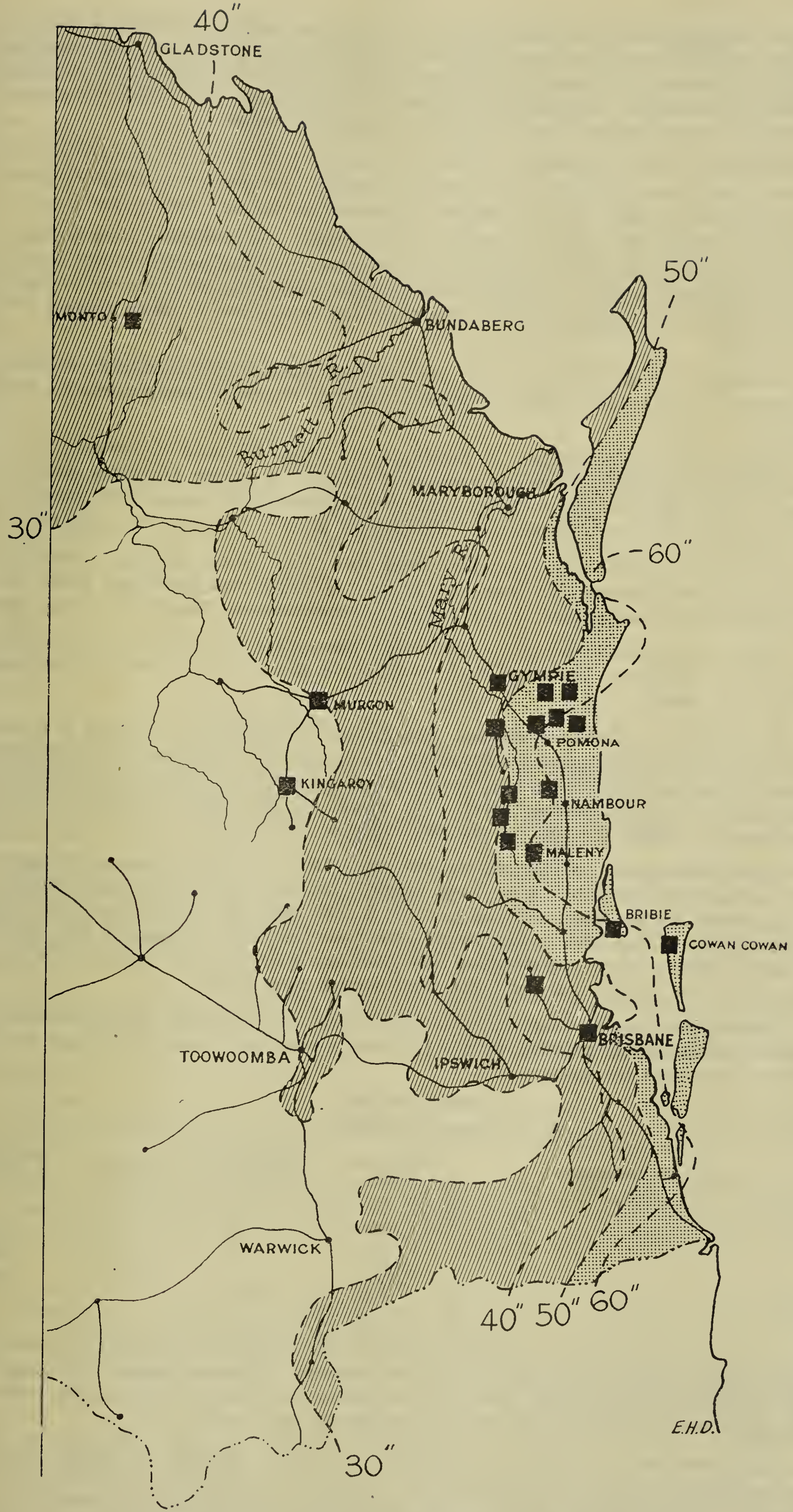

FIGURE V.—Present Known Distribution Geographically of "Q" Fever.

The Susceptibility of the Bandicoot to "Q" Fever.—Bandicoots 8 and 9 came to the laboratory in their mother's pouch, and were reared in captivity. As they had had no opportunity of natural "Q" fever infection in the bush, they were suitable for experimental inoculation. The mother was trapped at Maleny on 2nd October, 1937. The young ones were first noticed to come completely out of the pouch on 28th October.

Bandicoot 8 was inoculated intraperitoneally with 3 mils. of infective guinea-pig spleen-liver emulsion on 10th December, when it weighed 312 grams. A 230-gram guinea-pig injected with half the dose reacted strongly. Bandicoot 8 did not develop any fever.

On the seventh day after inoculation 1 mil. of blood was withdrawn from the heart and injected into a guinea-pig which reacted. On the tenth day the bandicoot was killed. Its weight was then 295 grams. The spleen was enlarged, weighing 3·24 grams, or 1·10 per cent. of the body weight. Guinea-pigs injected with blood and spleen liver emulsion reacted typically with "Q" fever.

Bandicoot 9 was inoculated with 5 mils. of guinea-pig spleen-liver emulsion on 1st February, 1938. It then weighed 518 grams. One mil. of this emulsion infected a 300-gram guinea-pig.

There was no febrile reaction in Bandicoot 9. It was killed on the seventh day, when it weighed 535 grams. The spleen was moderately enlarged, weighing 4·5 grams, equal to 0·84 per cent. of the body weight. Guinea-pigs were injected with organ emulsions, and the "Q" fever virus was found present in as little as 0·01 gram of blood, spleen, and liver.

Six other bandicoots have been inoculated with "Q" fever material. None of them showed any febrile response. In three of the six "Q" virus was reobtained from blood or organs by guinea-pig inoculation. There was no evidence that the other three became infected.

These experiments show that the bandicoot is susceptible to "Q" fever, that it takes the infection in an inapparent form, and that the infective agent may be present abundantly in the blood and organs.

Examination of Bandicoot Spleens.—An increase in the size of the spleen is a constant feature of "Q" fever infection in guinea-pigs, rats, and mice. Attention was therefore given to the size of the spleens of the captured bandicoots, as a possible indication of natural infection. The spleens were weighed and measured. The weight of the spleen in relation to the body weight appeared to give the most satisfactory index of spleen size.

Among thirty-seven spleens, the smallest was 0·12 per cent., the largest 1·59 per cent., and the average 0·51 per cent. of the body weight. 1·59 per cent. was an exceptionally high figure, the second largest being 1·07 per cent. It is noteworthy that the spleens of the youngest bandicoots—those under 1,000 grams weight—were all below the average of 0·51 per cent., and that the spleens of the largest—those over 2,000 grams—were all but one over the average. The spleens of the intermediate bandicoots were spread more evenly.

These figures may be compared with those in the table, which shows the spleen sizes of bandicoots experimentally infected with "Q" fever. The tables does not include the three bandicoots unsuccessfully inoculated.

TABLE XXVIII.

BANDICOOT SPLEENS.

Serial Number of Bandicoot.	Body Weight. (Grams).	Day after inoculation when spleen examined.	Weight of spleen. (Grams).	Percentage of body weight.
8	295	10	3·24	1·10
9	535	7	4·5	0·84
5	1,071	8	7·0	0·65
14	1,706	8	12·4	0·73
13	908	46	5·5	0·61

A bandicoot with active "Q" fever infection may therefore be expected to have a spleen definitely heavier than the average figure of 0·5 per cent. of the body weight. Although many of the captured bandicoots had rather large spleens, the failure of guinea-pig inoculation shows that in none of them was the enlargement due to "Q" fever.

The Search for "Q" Virus in Bandicoots.—A mixed emulsion of spleen, liver, and kidney was prepared from each of twenty-eight bandicoots and injected into guinea-pigs. Blood from another bandicoot was injected. None of the guinea-pigs showed any abnormal rise of temperature during fourteen days. Each guinea-pig was then killed and a spleen-liver emulsion was injected into another guinea-pig. None of these reacted either.

Agglutination Tests with Bandicoot Sera.—Serum from forty-four bandicoots was sent to Miss Freeman, who tested it for agglutination with an emulsion of "Q" *rickettsiæ* prepared from mouse livers and spleens. Four were found to give positive results. These bandicoots were caught at Cooloolabin, Nambour, and Cowan Cowan (two). Thus, of thirty-seven bandicoots tested from the Nambour district, two were positive, and of five tested from Moreton Island, two were positive. The high proportion in the small Moreton Island series calls for further investigation of this area.

Protection Tests with Bandicoot Sera.—The presence of antibodies in the sera of two of the bandicoots was confirmed by guinea-pig protection tests. In these tests 1 mil. of an infected guinea-pig liver emulsion was mixed with a mil. of undiluted bandicoot serum and of various dilutions of the serum. The mixtures were allowed to stand for half an hour at room temperature and then injected into guinea-pigs. Two guinea-pigs were used for each dilution. Protection was evidenced by the guinea-pig remaining afebrile.

The results are tabulated below, and show strong protection with the serum of Bandicoot 25, and some protection with that of Bandicoot 17.

TABLE XXIX.

——	Serum Dilution.	Duration of Fever, Days.	Protection.
Control guinea pigs	Without serum	6, 7	
Bandicoot 29 (control)	Undiluted	1, 5	Partial, —
Bandicoot 25	Undiluted	0, 0	+ +
	10^{-1}	0, 0	+ +
	10^{-2}	0, 3	+ —
	10^{-3}	3, 4	— —
Bandicoot 17	Undiluted	0, 0	+ +
	10^{-1}	3, 4	— —
	10^{-2}	3, 5	— —
	10^{-3}	4, 7	— —

SUSCEPTIBILITY OF VARIOUS BUSH ANIMALS.

During the year four bush animals as well as the bandicoot were tested and found susceptible to "Q" fever—*Rattus culmorum,* water-rat, opossum, and rat-kangaroo. The last three are common in the "Q" fever endemic area. *Rattus culmorum* is common in the North Queensland sugar fields, but there is no certain record of it south of Mackay.

Rattus culmorum.—Four rats of this species were inoculated with infected guinea-pig spleen-liver. One (No. 2) was accidentally killed on the third day after inoculation. There was a mild febrile reaction in each of the others. No. 1 was killed on the fourteenth day. Blood was injected into one guinea-pig, which did not react. Spleen-liver was injected into another, which reacted with a typical fever and was found immune.

With No. 3 the "Q" virus was obtained by guinea-pig inoculation from the blood during the febrile reaction on the third day, and from the spleen-liver when it was killed on the fifth day. No. 4 was killed on the seventh day, and the "Q" virus was obtained from its blood and spleen-liver.

The *culmorum* rats for this experiment were bred in captivity by Mr. W. A. McDougall, Assistant Entomologist, at the Central Sugar Experiment Station, Mackay, and were received by his courtesy.

Hydromys chrysogaster.—Two water-rats were inoculated. The first, which was caught near a wharf in Brisbane, showed a temperature reaction on one day—the sixth. It was killed on the fourteenth day. The "Q" virus was obtained by guinea-pig inoculation from a mixed emulsion of its organs.

The other died from an obscure cause on the fifth day after inoculation. There was no rise of temperature. The "Q" virus was obtained from the blood and from a mixed spleen-liver-kidney emulsion. This water-rat was caught at Nambour.

Opossum (*Trichosurus vulpecula*).—An opossum captured at Nambour was inoculated with "Q" fever. It did not show any significant rise in temperature. It was killed on the seventh day. The spleen had a full appearance. A guinea-pig injected with a strong spleen emulsion reacted well, and was later found immune; one injected with 3 mils. of blood died of intercurrent disease; and those injected with 0·01 gram of spleen and blood failed to react.

Rat-Kangaroo (*Aepyprymnus rufescens*).—A rat-kangaroo caught at Kiamba was inoculated. There was no rise of temperature. It was killed on the eighth day. The spleen looked swollen. Guinea-pigs injected with a strong spleen-liver emulsion, with 0·01 gram of spleen, and with 3 mils. of blood, all reacted well. One injected with 0·01 mil. failed to react.

THE SUSCEPTIBILITY OF THE DOG TO "Q" FEVER.

Two fox-terriers were inoculated with the "J" strain of "Q" virus in the form of guinea-pig liver of the thirty-eighth passage. Both dogs reacted with fever on the third day after inoculation. The fever in one dog lasted three days; in the other one day only. Each dog showed loss of appetite, loss of energy, and apparently some abdominal tenderness.

The first dog was killed on the sixth day after inoculation. The only post-mortem abnormality was a moderately enlarged spleen. The "Q" virus was recovered from its blood and spleen by guinea-pig inoculation.

The second dog was splenectomized on the thirty-first day and killed on the forty-fifth. The "Q" virus was not obtained from this dog, either from blood samples taken at intervals, or from the spleen, or from the other organs.

The experiments show that the dog is susceptible to "Q" fever, that it is a potential reservoir of the virus, and that it, in conjunction with its ectoparasites, might be a source of human infection. The dog tick, *Rhipicephalus sanguineus,* which in the Mediterranean is a vector of *fièvre boutonneuse,* is present in Queensland. However, it seems unlikely that the dog plays any important part in the natural transmission of "Q" fever. The patients have had no special association with dogs, nor would the disease have its localised distribution if it was spread by them.

In the conduct of the experiments on the dogs, as well as those on the calves, sheep, and pigs, we received great assistance from Mr. J. A. Rudd, L.V.Sc., Director of the Animal Health Station, Yeerongpilly, and from Dr. Legg and Mr. Ross Nott, B.V.Sc., of his staff.

THE RELATION OF DOMESTIC ANIMALS TO "Q" FEVER.

The susceptibility of calves, sheep, and pigs was tested by injecting a pair of each of these with infected guinea-pig liver. There was a mild elevation of the temperature of the calves on the fourteenth day after inoculation. There was no significant rise in the temperature of the other animals. One of each pair was killed on the sixteenth or eighteenth day after inoculation, but no post-mortem abnormalities were revealed. Guinea-pigs inoculated with the blood and organs in no case developed "Q" fever. However, the sera of some of the animals developed "Q" agglutinins.

The experiments failed to demonstrate definite susceptibility of the calf, sheep, and pig. They do show that, if these animals suffer from "Q" fever, they take it in a mild and inapparent form. In reviewing this work, it is felt that if the animals had been killed earlier there would have been a greater chance of the recovery of virus from them.

The positive "Q" agglutination in the blood of at least one cow at Cooloolabin is evidence that cattle may suffer from "Q" fever.

In another section it is shown that "Q" fever is endemic in the North Coast district. Large numbers of cattle and pigs come to Brisbane from this district. The possibility of the mechanical carrying of an ectoparasitic vector seems likely because of (1) the failure of inoculation of calves to cause obvious infection, and (2) the occurrence of "Q" fever in workers who have no connection with animals or meat.

There are no sheep in the North Coast district, so that they could not be carriers.

As between cattle and pigs, there is some evidence that cattle are more likely than pigs to be carriers.

EXPERIMENTS IN "Q" FEVER TRANSMISSION.

During the summer months the laboratory stock of white mice became heavily infested with *Liponyssus bursa,* the tropical fowl-mite. Attention has previously been drawn by Professor Cleland, Sir Raphael Cilento, and others to this mite's habit of attacking man. The opportunity was taken of performing a series of experiments designed to determine its ability to transmit "Q" fever.

In the first experiment a large number of protonymphs bred from females collected in infested cages were allowed to feed upon a febrile guinea-pig injected some days previously with "Q" virus. At intervals of several days these mites were allowed to feed upon a series of test guinea-pigs until they ultimately developed to maturity. Guinea-pigs were also injected with specimens at different stages of development.

Daily temperature recordings were made and the guinea-pigs passaged at the end of fourteen days. The passage guinea-pigs were injected with a strain of "Q" virus six weeks after their experimental injection, to determine whether any immunity to "Q" fever was present.

In a second experiment, performed concurrently with the first, adult mites were allowed to engorge upon a febrile guinea-pig. The mites were then transferred to test-tubes, and the protonymphs, which developed within several days, were fed on and injected into a series of guinea-pigs after the manner described for the first experiment. No conclusive evidence of transmission was obtained, but it is hoped to repeat the experiment when opportunity offers.

Experimental transmission was also attempted, using *Ctenocephalus felis* (the cat flea) and a rat-mite (*Lælaps anomalus*). A negative finding resulted in each case.

"Q" FEVER FIELD INVESTIGATION.

During the past twelve months four visits were made to the North Coast dairying district, in order to collect data relative to the epidemiology of "Q" fever.

Two main lines of investigation were followed. Firstly, an attempt was made to obtain evidence of the occurrence of "Q" fever as a disease of dairy cattle; secondly, an effort was made to isolate the virus from native animals and/or their ectoparasites, trapped in the endemic area.

During July, 1937, two farms at Maleny and Kenilworth respectively, where proved cases of "Q" fever had recently occurred, were visited. In October another case at Cooloolabin was investigated.

A large number of cattle-ticks, *Boophilus microplus* and *Hæmaphysalis bispinosa,* were collected from cows and injected into guinea-pigs. No pig developed fever. A negative result was also obtained with *Linognathus vituli,* the long-nosed sucking louse of cattle.

Investigation of Cows.—Two blood samples were taken from cows while febrile and forwarded to the laboratory for investigation. Guinea-pig inoculation in each case gave a negative finding.

In January, 1938, thirty-four blood samples were taken from cows at Cooloolabin and Maleny. Agglutination tests were performed with these sera by Dr. Burnet. One cow from Cooloolabin gave a definitely positive result. Approximately one-half of the sera appeared to show some degree of positivity.

All of these cows contracted three-day sickness early in 1937, and several had a history of an undiagnosed febrile condition in April and May of last year. However, clinical history could not be correlated with the results of serological examination.

A large series of cattle sera from other districts have been tested with negative results.

This evidence suggests the occurrence of "Q" fever naturally in an inapparent form among cattle probably exposed to infection by some blood-sucking arthropod.

Capture of Native Animals.—Attention was directed to the short-nosed bandicoot, *Isoodon macrourus* (Gould), by the abundant evidence of its presence in the districts visited. Several specimens were trapped and examined. Traps were distributed to farmers and arrangements made for a regular supply of animals to be forwarded to the laboratory for investigation. It has thus been possible to examine a series of fifty bandicoots and to establish further facts of epidemiological importance.

Other animals examined include *Phascogale flavipes flavipes,* marsupial mouse; *Trichosurus vulpecula,* silver-grey opossum; *Aepyprymnus rufescens,* rat-kangaroo; and *Rattus lutreolus imbil.* Two specimens of the latter species were trapped in a patch of cowcane at Maleny. The sub-species was described last year by Troughton from specimens causing damage to the hoop pine plantations at Imbil. The Maleny specimens provide the second record of the occurrence of the species in Queensland. Six more examples were later captured at Imbil.

Visit to Imbil Scrubs.—A visit was made to Imbil, in the Mary Valley, in June, 1938. Around Imbil are large State forests planted on land originally covered by dense scrub. There is still much scrub left as firebreaks between the plantations. A large number of workers are employed in the plantations.

The purpose of the visit was to collect blood samples from forestry workers and to capture native animals and their parasites. If "Q" fever is endemic in scrub country, one would expect to find a high incidence of "Q" fever among the forestry workers.

This work was made possible by the helpfulness and courtesy of the officers of the Forestry Department, who assisted it in every way.

Blood from sixty-five men was collected and examined at the Walter and Eliza Hall Institute for "Q" agglutination. Six samples showed positive agglutination. The particulars of these men are as follows:—

M.2 had worked in the bush all his life, and said he had "influenza" every two or three years.

M.12 had worked in the bush for six years, and gave no history of fever.

M.18 had worked eight years in the bush, and gave no history of fever.

M.40 had worked in the bush for eighteen years. He had had three or four attacks of "coastal fever" in the last six or seven years.

M.43 had worked in the bush for four years. He had a "fever" of a week's duration in January, 1937.

M.49 had worked ten years in the bush. He had a severe attack of "coastal fever" five years ago, before he came to Imbil.

It is interesting to note that two of the six had no history whatever of a recognised attack of "Q" fever. In this respect they resemble some of the abattoir workers in Brisbane in whom "Q" agglutination was found without any history or complaint of obvious "Q" fever.

The low proportion of positive tests among the Imbil forestry workers shows that Imbil is not a serious centre of "Q" fever. It also shows rain-forest country is not necessarily highly infective.

During the dry winter season rats are apt to damage the young pine trees on the Imbil plantations. With the help of the forestry officers, ten rats were captured alive. These proved to be *Rattus lutreolus* and *Rattus assimilis.*

Sandflies (*Forcipomyia* species) were noticed to be common near the scrub. Some were caught and material inoculated into guinea-pigs, without result.

Brisbane Abattoir.—Numerous visits were paid during the year to the Brisbane abattoir.

The animals were examined for parasites. Cattle ticks, *Boophilus microplus,* were commonly found on the cattle, and occasionally the New Zealand cattle tick, *Hæmaphysalis bispinosa.* Some calves were heavily infested with fleas, which in all cases were found to be *Ctenocephalus felis.* The pigs often carried lice, *Hæmatopinus suis.* Samples of these parasites were injected into guinea-pigs, with negative results.

A survey was made of "Q" agglutinins in the blood of abattoir workers. Of ten meat inspectors, two showed agglutination. Both of these had had clinical "Q" fever. Of seventy-one other abattoir workers, nineteen showed agglutination. Of these, three were known to have had "Q" fever, nine others gave a history of fever, but seven stated that, so far as they knew, they had *never had any recognised fever.* This survey shows that it is possible for human beings to get "Q" fever in a form that *shows no signs whatever.* This conclusion is in accord with the results of guinea-pig experiments. No conclusion as to the incidence of "Q" fever among abattoir workers can be drawn from this small group, as the men examined were a very small proportion of the men (about 1,000) employed.

Sera from a series of sixty-eight cattle were collected at the abattoir and tested for "Q" agglutination. All were negative. Most of these cattle came from the Darling Downs.

EXAMINATION OF ECTOPARASITES.

In the search for an arthropod vector of "Q" fever, a large number of ectoparasites of native and domestic animals have been injected into guinea-pigs. The results to date have been entirely negative.

The survey has resulted in the discovery of several undescribed species of mites in addition to first records for the State.

The following table shows briefly the parasites examined and the guinea-pig inoculations made:—

TABLE XXX.

Parasite Examinations.

Parasite.	Host.	Locality.	No.	Guinea-pig Inoculation.
ANOPLURA—				
Linognathus vituli	*Bos taurus*	Kenilworth	*500	2
Hœmatopinus suis	*Sus scrofa*	Cooloolabin Cannon Hill	60	4
Polyplax sp.	*Rattus rattus*	Ipswich	9	2
Heterodoxus sp.	*Isoodon macrourus*	Maleny Cooloolabin Woombye Nambour	*1,000	6
Gliricola porcelli	*Cavia cobaya*	Brisbane	70	2
DIPTERA—				
Melophagus ovinus	*Ovis aries*	Sydney	30	1
Forcipomyia sp.	..	Amamoor Imbil	20	2
SIPHONAPTERA—				
Xenopsylla cheopis	*Rattus rattus*	Ipswich Cooloolabin	234	10
	Rattus norvegicus	Brisbane		
Ctenocephalus felis	*Bos taurus* *Canis familiaris* *Felis domestica*	Brisbane	180	5
Ctenocephalus canis	*Rattus norvegicus*	Brisbane	6	..
Leptopsylla musculi	*Rattus norvegicus* *Mus musculus*	Brisbane	15	3
Stephanocircus dasyuri	*Isoodon macrourus*	Maleny Cooloolabin Woombye Nambour	79	41
Pygiopsylla sp.	*Isoodon macrourus*	Maleny Cooloolabin Woombye Kiamba Nambour	124	
Echidnophaga myrmecobii	*Rattus rattus*	Ipswich	*50	..
ACARINA—				
Ixodes holocyclus	*Isoodon macrourus*	Maleny Cooloolabin Nambour	606	43
	Trichosurus vulpecula	Nambour		
	Felis domestica	Maleny Cooloolabin		
	Canis familiaris	Maleny		
	Homo sapiens	Cooloolabin		
Haemaphysalis bispinosa	*Bos taurus*	Maleny Cannon Hill	53	4
Haemaphysalis humerosa	*Isoodon macrourus*	Cowan Cowan Woombye Nambour	75	12
	Rattus rattus	Ipswich	..	..
Haemaphysalis spinigera var. *novae guineae*	*Isoodon macrourus*	Cooloolabin Nambour	2	2
Haemaphysalis bancrofti	*Trichosurus vulpecula*	Nambour	1	..
Boophilus microplus	*Bos taurus*	Maleny Kenilworth Cannon Hill Corinda	208	20
Rhipicephalus sanguineus	*Canis familiaris*	Gympie	28	4
Liponyssus bursa	*Mus musculus*	Brisbane	*300	27
Laelaps anomalus	*Rattus norvegicus*	Brisbane	*100	8
Laelaps melomys	*Melomys cervinipes*	Imbil	20	2
Laelaps sp. nov.	*Trichosurus vulpecula*	Nambour Brisbane	119	6
Heterolaelaps antipodianum	*Isoodon macrourus*	Woombye	3	2
Mesolaelaps australiense *Laelaps nuttali*	*Isoodon macrourus*	Woombye Kiamba Nambour	*437	26
Schöngastia antipodiana	*Phascogale flavipes flavipes*	Cooloolabin	20	5
Schöngastia dasycerci	*Isoodon macrourus*	Nambour Kiamba Imbil	*330	18
Listrophoridae sp. nov. (*a*)	*Isoodon macrourus*	Nambour Kiamba	*1,000	..
Listrophoridae sp. nov. (*b*)	*Trichosurus vulpecula*	Nambour	*20	..

* Approximate figures.

The Relation of “Q” Fever to Other Rickettsioses.

In previous publications the relation of “Q” fever to murine typhus and scrub typhus has been discussed, and the conclusion reached that the diseases were quite distinct. Further consideration has been given to a possible relation between “Q” fever and the other described rickettsioses.

“Q” fever differs from typical Rocky Mountain spotted fever in the greater severity of the latter disease for man and guinea-pig and the presence of a typical rash. However, with mild cases of spotted fever these points of distinction are not so clear.

To test for a possible relation, Drs. R. R. Parker and G. E. Davis, of Hamilton, Montana, were good enough to send us a supply of Rocky Mountain spotted fever vaccine and samples of sera from human and guinea-pig convalescents.

Five guinea-pigs were each given a subcutaneous injection of 1 mil. of the vaccine, and eleven days later were inoculated with “Q” virus. Each reacted with “Q” fever in a manner identical with the two unvaccinated controls. A second series of five guinea-pigs were each given two doses of the vaccine at an interval of eleven days, and then inoculated with “Q” virus after another eleven days. These also were not protected.

The Rocky Mountain sera were found, on testing, to contain no “Q” agglutinins, so that neither test gave evidence of any relation between the two diseases.

Sera from a variety of rickettsioses have been obtained by the courtesy of workers in other countries, and tested for “Q” agglutination at the Walter and Eliza Hall Institute. All were negative.

As far, therefore, as this work has gone, it would appear that “Q” fever has no relation to any previously known rickettsiosis.

Various Investigations.

The Relative Frequency of Typhoid and Paratyphoid Fevers.—The term “paratyphoid” is often used loosely to designate an illness like typhoid, which is not typhoid. When the term is confined to infection with *Salmonella paratyphi* (paratyphoid A) or *Salmonella schottmülleri* (paratyphoid B), paratyphoid fever is quite rare in Brisbane. No evidence whatever of the presence here of paratyphoid C has appeared during these investigations.

The relative frequency of the individuals of the enteric group in and around Brisbane is shown in the following table. The figures are drawn from two sources—patients admitted to the Brisbane General Hospital during the five years July, 1931, to June, 1936, and patients diagnosed in this laboratory during the three years July, 1935, to June, 1938. The figures from the Brisbane Hospital are quoted by courtesy of the General Superintendent, Dr. A. D. D. Pye.

Overlapping of cases has been avoided. Cases diagnosed by the isolation of the bacilli are shown separately from those diagnosed by agglutination. Some lack of precision is caused by four patients whose sera showed multiple agglutination. Altogether, there were 111 patients, of whom 101 were typhoid and nine (or ten) paratyphoid. On these figures, typhoid appears to be about ten times as common here as paratyphoid.

TABLE XXXI.

Relative Frequency of Typhoid and Paratyphoid Fevers in and around Brisbane.

(A.—As shown by culture of the bacilli from patients.)

——	Brisbane Hospital.	Health Department.	Combined Figures.
Eberthella typhosa	15	11	26
Salmonella paratyphi	2	0	2
Salmonella schottmülleri	0	0	0
Total patients	17	11	28

TABLE XXXI.—*continued.*

(B.—As shown by the presence of serum agglutinins, excluding patients already shown in A.)

—	Brisbane Hospital.	Health Department.	Combined Figures.
Eberthella typhosa	21	54 + 1*	75 + 1* = 75 or 76
Salmonella paratyphi	0 + 2*	1 + 1*	1 + 3* } = 7 or 8
Salmonella schottmülleri	3 + 2*	0 + 2*	3 + 4* }
Total patients	26	57	83

(C.—All patients.)

Typhoid fever	101
Paratyphoid fevers, A and B	9
Diagnosis doubtful, typhoid or paratyphoid	1
Total patients	111

* These patients showed agglutination, apparently equally significant, against two of the bacilli, and it was not possible on the evidence to say which was the infecting bacillus.

Of the two cases of paratyphoid A fever where the infecting bacillus was isolated, one was clinically like a mild typhoid, the other of the food-poisoning type. In the latter the illness began suddenly with severe diarrhœa and repeated vomiting and progressed to a fatal ending in seventy-one hours.

Undulant Fever.—In the investigation of cases of fever, the possibility of undulant fever was kept in mind. Sera sent for routine agglutination were tested against *Brucella abortus,* as well as against other organisms. No definite case of undulant fever was diagnosed during the year.

The sera of seventy-seven unselected abattoir workers (21st October, 1937) was tested for agglutination with *Brucella abortus.* Eleven were positive. Details of these are given in the table:—

Serial Number	Occupation.	Serum Dilutions.							History of Fever.
		20	40	80	160	320	640	Control	
3	Calf slaughterman ..	++	++	Tr.	—	..	..	—	16 days off work; 18 months before
8	Beef slaughterman ..	++	++	++	++	+	—	—	None; also gives "Q" agglutination
14	Beef slaughterman ..	++	+	—	..	..	..	—	None
21	Beef casings ..	++	++	++	++	—	..	—	Fever in 1933 of doubtful nature; probably undulant fever in July, 1936.
26	Beef casings ..	++	++	Tr.	—	..	..	—	Fever lasting 21 days in 1934; also gives "Q" agglutination
42	Freezer	++	++	++	+	—	..	—	None
47	Pig slaughterman ..	++	++	++	++	+	—	—	Mild illness 4 months before for one week; did not cease work; also gives "Q" agglutination
62	Beef slaughterman ..	+	Tr.	..	..	..	..	—	None
77	Boner	+	—	..	..	..	..	—	None
80	Tank house	++	++	++	++	Tr.	—	—	Fever 3 months before, 5 days in bed; also gives "Q" agglutination
82	Tank house	+	—	..	..	..	..	..	Fever 2 years before; one week in bed

The results were read after 48 hours at 37° C.
++, complete agglutination.
+, partial agglutination.
Tr., trace of agglutination.
—, no agglutination.

In three cases the agglutination titre is certainly too low to be significant; in three more it is quite low. In the remaining five cases the results may be accepted as indicating contact with *Brucella abortus,* at some time and place undetermined. Two of these give no history of any obvious fever so far as their recollection went.

The illness of Patient 21 was described as a probable case of undulant fever in the Annual Report for 1935-36. Patients 47 and 80 had recently had fever, but, as the sera of both also agglutinated "Q" rickettsiæ, one cannot definitely ascribe the illnesses to undulant fever.

Filariasis.—A filaria survey was made at the Brisbane General Hospital on two nights in January and February, 1938. The work was done by a team of four officers from the laboratory. The examinations were begun at 9.30 p.m. and continued till 1.30 a.m.

Eight wards, surgical and medical, male and female, were visited. Patients seriously ill were omitted, as it was not considered justifiable to disturb their rest. One patient with suggestive symptoms of filariasis had been sent in specially for the examination. Except for the inclusion of this patient and the omission of the seriously ill, the material was unselected.

Two hundred and twenty-eight patients were examined, and in no case were microfilariæ seen. This shows a tremendous improvement since 1908-9, when McLean found 10·8 per cent. infections among 1,200 routine admissions to the Brisbane Hospital.

In the routine laboratory work, and apart from the survey, eight suspects were examined for filariasis. Only one case was positive. This was a young woman from Thursday Island, who two years ago developed a lymphangitis of the broad ligament, which was operated on. Microfilariæ were present in the bloodstream then, and have persisted to the present time, although she has remained in good health since her operation.

The great improvement in the incidence of filariasis in Brisbane in the last twenty years as shown by the survey is confirmed by clinical and post-mortem experience.

PUBLICATIONS.

Articles published by the laboratory staff during the year were:—

Derrick, E. H., "'Q' Fever, A New Fever Entity: Clinical Features, Diagnosis, and Laboratory Investigation," *Medical Journal of Australia,* 21st August, 1937, page 281.

Johnson, D. W., and Brown, H. E., "Mild Leptospirosis in Southern Queensland: A Classification of the Infecting Leptospira, and a Report of Eight Further Cases of the Disease," *Medical Journal of Australia,* 7th May, 1938, page 805.

SECTION OF PUBLIC HEALTH SUPERVISION.

DEPUTY DIRECTOR-GENERAL: JOHN COFFEY, F.R.C.S. (Edin.), L.R.C.P., D.P.H., L.M. (Rot.), F.R.San.I. (Lond.).
HEALTH OFFICER: ABRAHAM FRYBERG, M.B., B.S., D.P.H., D.T.M.
ACTING CHIEF SANITARY INSPECTOR: S. DUDLEY.
ACTING CHIEF FOOD INSPECTOR: C. M. CATO.

The transfer of responsibilities in respect of the general measures of prevention to local authorities and, in particular, in the metropolitan area, to the Brisbane City Council, provides large staffs in these areas which co-operate as required with the central body. The Department maintains a skeleton staff of two acting chief inspectors, in Brisbane, with eight inspectors, two acting inspectors (actually "assistants to inspectors" under the Public Service grading), one acting inspector (fish markets), and three cadet inspectors (all of whom have now passed the Royal Sanitary Institute's examination).

In the country there are five inspectors and one temporary inspector, while on special work there are eight officers, comprising one inspector and one temporary inspector for hookworm work, and six temporary inspectors associated with the control of leptospirosis and the inspection of cane areas prior to harvesting.

The following is an outline of the work carried out by the inspectorial staff for the year ended 30th June, 1938:—

SANITATION GENERALLY.

Sanitation is steadily improving, especially in respect of sewerage and drainage matters. These highly essential utilities must vastly benefit the areas where they are being installed, and will be a material factor in reducing sources of stagnating and putrefying drainage, with their resulting mosquito-breeding.

Quilpie.—The sewerage scheme laid down for the town of Quilpie is nearing completion, and, when working, will certainly also reduce the fly menace in that town.

Townsville.—The construction of the sewerage scheme is progressing. The city area is nearing completion. The building of the purification works at the outfall is now under way. The completion of this work will bring this tropical city to a state of sanitation in accord with its increasing importance, and should reduce infectious diseases, especially those of the intestinal type.

Rockhampton.—It is also pleasing to note the progress in the construction of sewerage works at Rockhampton. The main sewer and most of the subsidiary branches, together with the attendant house connections, have been completed, as also the treatment plant at the outfall works. The construction of the 50-feet pump well from which the sewage is pumped by rising mains to the treatment works about a mile away (at Gavial Creek) is now well under way. When this is completed, the suites will be installed at the various premises and the services will be available.

Maryborough.—A sewerage system is being installed here also, and the work is progressing satisfactorily.

Ipswich also has plans prepared for sewering that city. The above works are mentioned to show the recent marked trend in local government areas towards better living conditions.

Inspectorial work has been carried out by staff from the Central Office as follows:—

General inspections	1,148
Sanitary depots	40
Garbage depôts	36
Hotels	271
Official calls	130

One visit was paid to the city of Ipswich regarding a site for a slaughteryard, and a report made.

Rockhampton.—In consequence of a complaint received concerning the housing conditions at North Rockhampton, a visit was paid to this centre, inspections carried out, and a report submitted on the circumstances.

Gladstone was visited in regard to fly incidence at the hospital and, as a result, a report furnished recommending the removal of certain activities to other sites. A further visit was made to select a new site for a sanitary depot, and a report and recommendations were made.

Mackay.—As a result of a complaint regarding slaughteryards, a visit was made in conjunction with the Chief Inspector of Stock (Mr. Cory), following which a report and recommendations on the matter were submitted.

Gatton College and High School.—This institution was visited in regard to the drainage and water supply. A report and recommendations were furnished which, if carried out, will certainly improve the surroundings.

Beaudesert.—In compliance with a request from the Chamber of Commerce, a visit was paid to this town, and an address delivered on "Septic tanks and their functions."

Kalbar was visited re hotel sanitation.

A visit was made to Mount Morgan re school sanitation, and a site was selected for the sanitary block. Whilst there, an inspection of the hospital drainage was made and a report and recommendations regarding its remodelling were furnished.

During the year, before each peak period, the seaside resorts were visited from the New South Wales border at Coolangatta as far north as Noosa Heads. Where necessary, the local authorities were notified in regard to repairs. Steady advance is being made in some of the resorts, where the former wooden earth-closets are disappearing, and more up-to-date structures of brick and concrete, with septic tanks attached, are being erected.

HOTEL SANITATION.

The number of hotels inspected was 271, and here again steady improvement is noticeable. Recent legislation has done much to improve hotels, and where modern sanitary fittings can be installed, these are ordered. Unfortunately, in unsewered areas where the soil is of a self-retentive nature, up-to-date disposal is sometimes impossible.

The scrutiny of all plans for licensed premises for alterations, amendments, and advice as to disposal of wastes has entailed a considerable amount of work. Eighty-seven plans were submitted and reports forwarded to the Licensing Commission. All objections noted during inspection were submitted directly to the Licensing Commission also.

BY-LAWS, &C.

By-laws were perused for the following local authorities:—Bundaberg, Burrum, Isis, Murweh, and Pioneer; and sanitary sites as follows were approved:—Cairns Shire, Herberton, Noosa, and Tara.

SANITARY CONTRACTS.

The following sanitary contracts were perused and amended where necessary:—Boonah, Bundaberg, Beenleigh, Bendemere, Burrum, Cairns Shire, Cloncurry, Glengallan, Gooburrum, Isis, Kilkivan, Livingstone, Murilla, Noosa, Quilpie, Rosalie, Tambourine, Thuringowa, Thursday Island, Townsville, Wambo, Widgee, Wondai, and Woothakata.

PLAGUE CONTROL.

The work of plague and rodent control is still being effectively carried out at the principal shipping centres on the coastline. This is, in itself, a most important function when one considers the length of coastline (2,000 miles) and the amount of shipping calling at these ports from Asia, where the disseminating foci of bubonic plague are situated within five days' steamer sail and one to two days' aeroplane range.

The towns where permanent rat-catching is carried out are:—Cairns, Townsville, Mackay, Rockhampton, Bundaberg, Maryborough, Gympie, Ipswich, and Brisbane. Weekly returns are furnished from each of these centres, and smears are submitted to the laboratories for examination, the results being forwarded to this office. The number of rodents submitted to the Department's laboratory (26,520) is detailed in the report of that section.

During the year eleven persons were met and conveyed to Cleveland for transportation to the lazaret.

Water-sampling outfits were despatched to various parts of the State and, when returned, were delivered to the sections of the Government Analyst and of Laboratories for examination. The samples submitted were 148 for bacteriological examination and 128 for chemical analysis.

Sanitary arrangements at the Royal National Association grounds were inspected before the exhibition, and during the show were kept under close supervision by the inspectorial staff and the departmental nurse, who notified the ground superintendent of any defects. These were immediately rectified and, as a result, no major nuisance occurred.

Towns Visited from Central Office.—Adavale, Alberton, Alexandra Headlands, Amby, Amity Point, Augathella, Beenleigh, Burleigh Heads, Caboolture, Canungra, Caloundra, Coolangatta, Coomera, Cooroy, Cunnamulla, Currumbin, Dulacca, Eulo, Eumundi, Fernvale, Gatton, Glamorgan Vale, Goodna, Gympie Terrace, Ipswich, Landsborough, Langlo, Maleny, Maroochydore, Maryborough, Miami, Miles, Mitchell, Morven, Muckadilla, Mudgeeraba, Mungallala, Nambour, Nerang, Oxenford, Palmwoods, Pialba, Proston, Quilpie, Redbank, Redcliffe, Roma, Scarness, Southport (2), Taroom, Tewantin, Thargomindah, Wallumbilla, Wandoan, Waterford, West Burleigh, Woombye, Wyandra, Yandina, Yatala, Yeulba.

Miles travelled—	
By rail	4,098
By car	1,188
By boat	90

TOOWOOMBA SUB-OFFICE.

Town and Country Inspections—	
Number of inspections	721
Number of official calls	83
	804
Nuisances	123
Sanitary depôts	15
Garbage tips	21
Towns visited	21
Miles travelled—	
By train	2,256
By motor car	542

During the year ended 30th June, 1938, this sanitary division has been given attention in the manner detailed in the lists submitted herewith.

No extended tours of inspections were undertaken from this office for the period now under review; twenty-one country visits were undertaken, all in connection with special investigation work.

City of Toowoomba.—The matter of the pollution of Gowrie Creek has received further attention throughout the year, and, in agreement with past representations made by this Department, the Toowoomba City Council is requiring improved industrial treatment processes at certain premises from which considerable pollution gained entrance to the waters of the creek in question. A marked improvement has also been obtained in the treatment processes at the sewage purification works, Wetalla, with the installation of a final secondary sedimentation tank, together with artificial cascades.

The Cooby Creek water supply scheme has also made a forward move, and the work of constructing a section of the superstructure of the dam is now in progress. A visit of inspection was made to the constructional workers' camp at Cooby Creek, and a special report with certain recommendations submitted.

Mosquito control measures at Toowoomba have not met with the same success as in years gone by, and this regrettable feature is, perhaps, attributable to relaxed vigilance occasioned by the allocation of local health inspectors to additional onerous duties arising out of the supervision of the Council's water restriction ordinances.

City of Warwick.—The Warwick City Council has resolved to undertake a city sewerage scheme, and application has been made for the necessary loan accommodation to carry out the project. This would be the means of correcting the many imperfections in the existing drainage which have been the source of considerable adverse comment by visiting officers from this Department for a number of years.

Town of Dalby.—A special visit of inspection was paid to the Town of Dalby for the purposes of investigating the town waste disposal scheme, and the detailed report submitted stressed the unsatisfactory standard of the existing system and also recommended the early installation of an approved deep sewerage system.

In respect of hotel sanitation the figures are:—

Hotels inspected	71
Objections filed	21
Hotels re-inspected	30

Licensing Districts Visited.—Toowoomba, Warwick, Chinchilla, and Dalby.

Towns Visited.—Helidon, Cecil Plains, Tara, Jandowae, Dalby, Pittsworth, and Chinchilla.

The Licensing Commission is requiring a much-improved standard of hotel sanitation; keen supervision is therefore given to the different installations during the progress of the work.

The improved sanitation at the hotels is indirectly focussing attention on the apparent neglect on the part of some local authorities to undertake the provision of suitable works of town sewerage in country townships. While in places where the local soil formations preclude the disposal of foul waste waters from sinks and bathrooms, &c., upon the curtilages of the respective premises, attention is invited to the urgent demand for some definite plan for the disposal of foul waste waters in such places. The only feasible means of doing this appears to be the installation of deep, foul-water sewerage systems whereby the final disposal could be provided for by suitable works of broad surface irrigation.

ROCKHAMPTON SUB-OFFICE.

During the past year the usual keen supervision has been exercised under the provisions of the Health Act and Regulations.

Some 1,892 premises were visited for inspection purposes, which number includes:—

Sanitary depôts inspected	25
Refuse tips	22
Nuisances	93

In addition, official calls made or received totalled 161.

The distance travelled by rail and car services totalled 3,928 miles.

Twenty-five towns and townships visited were as follows:—Aramac, Avondale, Barcaldine, Blackall, Bororen, Builyan, Burua, Calliope, Emerald, Emu Park, Gladstone, Ilfracombe, Isisford, Longreach, Lowmead, Many Peaks, Marmor, Miriam Vale, Mount Morgan, Muttaburra, Nagoorin, Tambo, The Caves, Ubobo, Yeppoon.

Sanitation.—In areas visited where the local authority employs a health inspector general sanitary conditions were found to be satisfactory. In the Rockhampton City area good care is taken by the city health inspector of matters coming under his jurisdiction, in so far as one man can carry out such duties in an area having a population of 30,000 inhabitants. Assistance would result in many minor nuisances being detected and remedied before their seriousness gives rise to complaints, as at present.

Conditions disclosed on a survey at Mount Morgan resulted in the department calling upon the local authority to join with the contiguous area of Banana in the appointment of a qualified health inspector.

The areas of Blackall (Kargoolna Shire), Isisford, and Tambo were temporarily without the services of a health inspector, with a consequent falling-off in the general standard of sanitation. These areas have again joined in the appointment of a qualified officer, and a return of satisfactory conditions can be expected.

Good progress continues to be made in the laying-down of the sewerage scheme in the City of Rockhampton, and the public is becoming keen to see the scheme in operation.

The Longreach Council, also, is alive to the benefits accruing from a proper sewerage scheme. It is to be hoped that their efforts in this direction may be brought to fruition in the near future.

Water Supplies.—Reports were called for and made in connection with the reticulation of untreated river waters to premises at Emerald and Longreach.

Mount Morgan suffered from a particularly severe drought, and the urgent necessity of a proper water supply for the township was plainly evident. A preliminary survey has been made of possible sources for such a supply. Should a suitable scheme be brought into operation, a considerable improvement in local hotel sanitation can be anticipated.

Dilapidated Houses.—The Rockhampton city health inspector was accompanied on a number of inspections of dilapidated houses, resultant action being taken by the City Council.

Piggeries.—Several piggeries were inspected. A report submitted to Head Office on a piggery situated in the Fitzroy area resulted in the local authority having it closed down.

Hotel Sanitation.—Hotels inspected numbered 74, and in almost every instance improvements or repairs were requisitioned. In addition, many reinspections of work previously ordered to be done were carried out. Considerable improvements have been effected, particularly in the city area, where carpenters and other tradesmen have experienced a busy time. At least one hotel in the city is shortly to be replaced by a larger and more modern structure.

MACKAY SUB-OFFICE.

The Officer in Charge of this district reports:—

Sanitation has been greatly improved by the water-carriage sewerage system in Mackay; a portion still remains to be done, and steps have been taken to complete the whole city.

Sarina, also, has a scheme under consideration which, if carried out, will certainly be the means of abating the many active sewerage nuisances.

The various sanitary depots in the district have been inspected and found to be satisfactory, and the services have been carried out in an efficient manner.

Hotel premises are steadily being improved. Several modern concrete and brick buildings have been or are in the course of erection.

Number of inspections	2,735
Official calls	71
Nuisances	28
Sanitary depôts	12
Refuse tips	20
Towns visited	33

Country Towns Visited.—Sarina, Nebo, Retreat, Range, Eton, Homebush, Farleigh, Wundaru, Leap, Mount Pelion, Kolijo, Calen, Pindi, Yalboroo, Dundula, Pleystowe, Marian, Mirani, Garget, Pinnacle, Finch Hatton, Netherdale, Eungella, Walkerston, Carmila, Eimeo, Bowen, Miclere, Nindaroo.

Miles travelled—	
Train	400
Car	502

Taking everything into consideration, the year has been one of progress. Local authorities have carried out their work efficiently in the cause of the community.

TOWNSVILLE SUB-OFFICE.

Sanitation.—In Townsville, inspections covering all the Departmental activities in this section were regularly carried out during the year.

Written and verbal intimations were passed on to the Council on matters calling for action and the abatement of nuisances.

The disposal of nightsoil at the depot is well carried out, and the removal service is being conducted in a satisfactory manner.

The collection of refuse and waste matters within the city has not yet been placed on a properly organised basis. The existence of accumulations of refuse on so many premises is evidence that this service calls for improvement.

The provision of standard bins to premises is far short of the requirements.

The disposal of refuse at the tip has vastly improved, and the tip is being conducted in a more satisfactory manner than heretofore.

The construction of the sewerage scheme is progressing; the city area is nearing completion. The building of the purification works at the outfall is now under way.

The construction of street water channels in different areas has been continued during the year, and the drainage of these areas has been greatly improved.

Immunisation against diphtheria is still one of the Council's chief health activities. The campaign is well organised, and the Medical Officer of Health visits the various schools according to a well-mapped-out programme.

Public conveniences have been inspected from time to time. Improvements necessary have been attended to by Council.

Wharves and river frontages have been kept under observation for rat infestation.

Inspections and reinspections were made in connection with two cases of typhoid fever, and a report thereon submitted. An inspection was also made with the Health Officer, Dr. Fryberg.

An investigation into the pollution of the Ross River by the meatworks was made, and a report submitted.

Two resurveys were made into the sanitary conditions at Picnic Bay, Nellie Bay, and Arcadia—all on Magnetic Island.

Two venereal disease inquiries were carried out.

All the hotels in the Townsville Licensing District were inspected, and the necessary reports for the Licensing Commission forwarded through the Department.

Reinspections have been made, work supervised, and owners, architects, tradesmen, and others have been interviewed, advised, and instructed regarding the work required by the Commission. Plans and specifications have been checked, altered, or amended as was found necessary.

Two sessions of the Licensing Commission were attended when the Commission sat at Townsville.

All inspections and reinspections have been made in partnership with the police licensing inspector.

Charters Towers.—Progress in health matters at Charters Towers is being maintained. Sanitary services are being well conducted. Systematic operations in the prevention and destruction of rats and mosquitoes are now treated as regular routine work, and solid work and progress is being accomplished in this direction.

All hotels in the licensing district were inspected, and reports for the licensing commission forwarded.

Ayr, Home Hill, Brandon.—The sanitary conditions found at Ayr, Home Hill, and Brandon are very satisfactory, with the exception that the institution of a refuse removal service for the business section of the town has not yet been adopted by Council.

The nightsoil service is being conducted without complaint. The work at the depots is carried out in a first-class manner.

The disposal of refuse at the tips is well controlled, all deposits are kept well covered, and the tips present a clean and sanitary appearance.

The septic tanks and the sewerage at the general hospital were inspected, and the whole system found in a good working condition.

Investigation into the sleeping accommodation for the night staff at a garage was made, and arrangements made with the management for improvement.

Ingham, Halifax.—The Council have given instructions to the engineer to proceed with the necessary improvements at the Ingham and Halifax depots. New buildings and plant are to be provided, and the roads put in trafficable order.

The conduct of both depots is very satisfactory.

Refuse is being used for the reclamation of low-lying land at the side of the main road near Ingham and at Halifax. The disposal is satisfactory, and rubbish kept well covered.

The old tip requires a thorough cleaning-up.

The water scheme is very near completion. The tower is now under course of construction.

A number of hotels were reinspected, and reports submitted.

Inspector McNeil—

Inspections	817
Hotels	81
Hotel reinspections	118

Towns Visited.—Charters Towers, Ayr, Home Hill, Giru, Ingham, Halifax.

Inspector Wilson, Townsville Office, reports as follows:—

General inspections	363
Inspections—	
Rubbish tips	52
Sanitary depôts	10
Hotels	63
Official calls	102

The towns of Ayr, Hughenden, Prairie, Pentland, Torrens Creek, Homestead, Balfe's Creek, and portion of Thuringowa Shire were visited.

The towns inspected were in fair sanitary condition considering their localities and circumstances.

The worst sanitary circumstances (and it is common in the district) is the lack of self-closing lids on E.C. cabinets.

The disposal of household garbage has not been efficiently carried out by a number of local authorities, especially those areas on flat country. They have provided depots, but the garbage is simply dumped and left uncovered.

The practice at Hughenden is now much better. The combustible material is burnt, the residue being utilised to fill in an old pit. Ayr carries out the same method. At Townsville the rubbish tip is much improved by better covering and tipping to a smaller face.

Sanitary Depots.—The method of disposal of the nightsoil at the depots, with the exception of Ayr and Hughenden, was not satisfactory. The trenches were either too large or were being used too soon.

The method adopted at Townsville depot does not meet with approval. The nightsoil is emptied into large hoppers, and when these are full they are run along rails to the point of disposal, which has to be too large and deep for a good disposal.

Periodical visits have been paid to the sewerage reticulations.

The Council are constructing a stone wall on the north side of the river from Victoria Bridge to Stanley Street. When finished, the circumstances there will be much improved.

The Council have constructed and covered in a number of storm-water drains which at present carry sewage, but in future will be entirely storm-water carriers.

A number of visits have been paid to the Ross River meatworks in company with Mr. Laws, labour agent, regarding complaints. The company and employees' representatives met in conference with us and came to an amicable agreement.

Mount Spec (a mountain holiday resort) and Blue Water (a fresh-water bathing pool), both in Thuringowa Shire, were inspected in company with the shire health inspector, and advice given re the sanitary circumstances.

CAIRNS SUB-OFFICE.

I beg to submit the following report on the work done from this office during the year from the 1st July, 1937, to the 30th June, 1938.

Inspections under *"The Health Act of* 1937" were made at Cairns and the following places:—Daintree, Dimbulah, Feluga, Kuranda (2), Mareeba, Millaa Millaa, Mount Carbine, and Silkwood. These visits accounted for 916 miles travelled by rail and 206 by car. They were all visits to investigate some complaint at the centres mentioned, and, unless the opportunity offered, routine inspections were not made. I therefore have no report to make on the sanitation of the area outside the City of Cairns.

In the City of Cairns the usual sanitary services have been well maintained. The City Council, handicapped by the high level of subsoil water, has not yet abandoned the idea of a sewerage system, and, with the project still in mind, are having a thorough survey of the city made.

The filling-in of swampy lands, which has been a feature of the Council's works programme for years past, is now being enlarged by the large works undertaken by the Public Estate Improvement. This work by the Council and the Public Estate Improvement is an example which is followed by private landowners, and is doing much to reduce the mosquito-breeding grounds in and around the city.

Licensing.—Reports were furnished on fifteen hotels. The hotel accommodation at this city has improved considerably as a result of notices served by the Licensing Commission. Apart from the enlargement of some of the existing licensed premises, a general improvement in the sanitation at the hotels is noted.

FOOD AND DRUGS.

During the period under review (1937-38) the Division of Food and Drugs has continued its operations under the Pure Food and Drug Sections of the Health Act, the Health (Food Supply) Regulations, the Food and Drug Regulations, Health (Fish Supply) Regulations, Milksellers' Regulations, Footwear Regulations, and the Poisons Regulations. The new Health Act, which came into force on the 1st January, extended the operations of the staff in connection with the examination of paints and painted buildings, and it is difficult to cope with the volume of work imposed on the Division under the above enactments.

MILK (BRISBANE METROPOLITAN AREA).

The work of milk-sampling and inspections has been carried out as far as the exigencies of staff and finance have permitted, and it would appear that, if any extension of this valuable phase of food inspection is desired, consideration will need to be given to the augmentation of staffs, both inspectorial and analytical.

As in previous years, the work has been directed along the main channels—viz., sampling for both bacteriological and chemical analysis, inspections of vehicles and premises, and special investigations.

Sampling.—Sampling for both bacteriological and chemical analysis has been carried out at all avenues of production and sale, and the results are discussed in the respective analysts' reports. That the work has been unremittingly pursued is evidenced by the numbers of samples obtained.

One thousand and forty-seven legal samples were obtained for bacteriological examination, being a 20 per cent. increase on the previous year's work. Among these samples were twenty-five which were specially obtained for guinea-pig inoculation for the presence of T.B.

Two thousand eight hundred and eleven legal samples of milk were obtained for chemical analysis, this being a 20 per cent. increase also on the previous year's total. Included in this total are 61 samples obtained by headquarters staff from the following towns:—Bundaberg, Gatton, Laidley, Maryborough, Mitchell, and Wondai. The remaining 2,750 were secured in Greater Brisbane, South Coast and Beaudesert districts, Ipswich and Rosewood areas, and the North Coast districts.

Inspection of Vehicles and Premises.—Particular attention has been paid to vendors' premises and vehicles, and it is pleasing to note that a steady improvement is being effected. The provision of new regulations in the near future should enable the enforcement of a better class of milk vehicle. Extensions and improvements are being made to several of the existing wholesalers' premises, and this work is proceeding along the right lines.

Pasteurising Plants.—Inspections have been periodically made of the pasteurising plants in Brisbane and district, and these inspections, together with the results of sampling operations, have shown these plants to be fairly well conducted. It is pleasing to note that two extra milk-pasteurising plants are being planned.

Special Investigations.—During the period under review 25 samples of milk were obtained from a suspected area for guinea-pig inoculation to determine the presence or otherwise of T.B. Positive reactions were obtained in respect of two herds. The owners of these herds voluntarily submitted them to a tuberculin test by a veterinary surgeon of the Department of Agriculture and Stock. In all, 45 beasts, which showed positive reactions, were voluntarily destroyed. In this connection, it is to be hoped that, in the near future, a scheme for the compulsory testing of all herds producing milk for human consumption will be inaugurated.

Special Sampling.—During the year two special raids on milk-suppliers were made, the whole of the available staff participating. The first was on milk being carried to wholesale premises from farmers. In all, 182 samples of milk were obtained, representing a check on approximately 1,800 gallons of milk.

The second raid was on vendors retailing their milk, and resulted in 115 samples being obtained. In all, about 15 per cent. of the retail vendors in Brisbane were sampled on the one day.

The results are discussed in the report of the Government Analyst, and, as it must be borne in mind that both raids were definitely "surprise raids," the results are illuminating.

Prosecutions.—Where inspections and sampling have necessitated the prosecution of the offender, this work has been done, and the particulars are tabulated as hereunder:—

TABLE XXXII.

A.—PROSECUTIONS FOR ADULTERATED MILK (ADDED WATER) FOR YEAR 1937–38. (HEADQUARTERS.)

Date.	Place.	Added Water.	Fines.			Costs.		
1937—		Per Cent.	£	s.	d.	£	s.	d.
29th July	Worongary	9·0	9	0	0	1	9	6
4th August	Dayboro'	7·2	7	0	0	1	13	0
4th August	Dayboro'	7·2	7	0	0	1	13	0
11th August	Harrisville	21·8	20	0	0	3	19	0
25th August	Beenleigh	9·0	9	0	0	1	7	0
25th August	Beenleigh	4·5	4	10	0	1	7	0
25th August	Beenleigh	8·2	8	10	0	1	7	0
23rd September	Brisbane	8·2	8	0	0	1	1	0
5th October	Brisbane	9·0	9	0	0	1	7	0
8th October	Landsborough	16·3	16	0	0	3	9	0
16th November	Samsonvale	14·5	14	0	0	1	1	0
16th November	Samsonvale	10·9	10	0	0	1	1	0
25th November	Brisbane	20·9	20	0	0	1	7	0
16th December	Brisbane	5·4	5	0	0	1	1	0
1938—								
13th January	Brisbane	11·0	11	0	0	1	1	0
26th January	Brisbane	4·0	4	0	0	1	7	0
23rd March	Brisbane	16·3	16	0	0	1	7	0
21st April	Brisbane	12·7	12	0	0	1	7	0
14th June	Brisbane	7·2	7	0	0	3	9	0
16th June	Wynnum	4·5	5	0	0	1	7	0
28th June	Brisbane	14·5	14	10	0	1	7	0
Totals	..	..	£216	10	0	£34	7	6

TABLE XXXII.—*continued.*

B.—PROSECUTIONS FOR ADULTERATED MILK (EXCESS BACTERIA) FOR YEAR 1937–38.

Date.	Place.	Micro-organisms per Cubic Centimetre.	Fines.	Costs.
			£ s. d.	£ s. d.
1937—				
1st September	Petrie	15,147,000	1 0 0	2 8 0
19th November	Beaudesert	9,639,000	1 12 0	2 8 0
24th November	Beenleigh	8,424,000	2 12 0	2 8 0
24th November	Beenleigh	5,616,000	2 12 0	2 8 0
24th November	Beenleigh	5,508,000	2 12 0	2 8 0
1938—				
12th January	Brisbane	21,060,000	10 0 0	2 8 0
12th January	Brisbane	10,764,000	5 0 0	1 5 6
12th January	Brisbane	10,764,000	5 0 0	1 5 6
4th March	Landsborough	3,061,000	1 0 0	1 7 0
4th March	Landsborough	3,061,000	1 0 0	1 7 0
4th March	Landsborough	10,675,000	2 0 0	2 8 0
29th March	Brisbane	4,452,000	1 2 0	2 8 0
7th April	Brisbane	7,488,000	3 0 0	2 2 0
21st April	Wynnum	2,016,000	1 0 0	2 8 0
12th May	Brisbane	4,240,000	1 0 0	2 8 0
Totals	..	..	£40 10 0	£31 7 0

C.—PROSECUTIONS FOR FAT DEFICIENCY.

Date.	Place.	Percentage.	Fines.	Costs.
		Per Cent.	£ s. d.	£ s. d.
1937—				
15th July	Brisbane	39·4 deficiency	3 13 0	1 7 0
24th November	Beenleigh	36·3 deficiency	1 13 0	1 7 0
1938—				
12th January	Brisbane	21·2 deficiency	5 0 0	1 7 0
12th January	Brisbane	39·3 deficiency	7 0 0	1 7 0
12th January	Brisbane	30·3 deficiency	6 0 0	1 7 0
22nd February	Brisbane	33·3 deficiency	10 0 0	1 7 0
Totals	..	..	£33 6 0	£8 2 0

TABLE XXXIII.

MISCELLANEOUS PROSECUTIONS AGAINST MILKSELLERS BY HEADQUARTERS STAFF FOR YEAR 1937–38.

Date.	Place.	Nature of Offence.	Fines.	Costs.
			£ s. d.	£ s. d.
1937—				
15th July	Brisbane	Use of unregistered premises	2 0 0	0 6 0
4th August	Dayboro'	Sale of milk without license	0 4 0	0 6 0
5th August	Brisbane	Use of dirty vehicle	3 0 0	2 2 0
17th August	Brisbane	No approved bottling and capping machine	1 12 0	3 8 0
17th August	Brisbane	Water carried on milk vehicle	1 0 0	0 6 0
2nd September	Brisbane	Use of dirty vehicle	3 0 0	..
2nd September	Brisbane	Name and address not displayed on vehicle	1 0 0	..
19th October	Brisbane	Sale of milk without license	1 1 0	2 2 0
11th November	Brisbane	Use of unregistered premises	1 0 0	..
11th November	Brisbane	Use of unregistered premises	1 0 0	..
19th November	Beaudesert	Sale of milk without license	1 0 0	0 6 0
25th November	Brisbane	Milk utensils without lids	1 0 0	0 6 0
25th November	Brisbane	Use of " dip " measure	1 0 0	0 6 0
7th December	Brisbane	Handling milk in exposed place	1 0 0	0 6 0
9th December	Wynnum	Sale of milk without license	0 5 0	0 6 0
9th December	Wynnum	Bottling milk by hand	0 10 0	0 6 0
14th December	Brisbane	Handling milk in exposed place	2 0 0	..
16th December	Brisbane	Bottling milk by hand	1 0 0	..
1938—				
12th January	Brisbane	Sale of milk without license	1 0 0	0 6 0
13th January	Brisbane	Handling milk in exposed place	2 0 0	..
13th January	Brisbane	Sale of milk without license	1 0 0	..
10th February	Brisbane	Handling milk in exposed place	3 0 0	..
16th February	Brisbane	Milk vessels without lids	3 0 0	0 6 0
16th March	Brisbane	Sale of milk without license	5 0 0	0 6 0
29th March	Brisbane	Use of unregistered premises	1 4 0	0 6 0
30th March	Brisbane	Name and address not displayed	0 1 0	0 6 0
30th March	Brisbane	Use of untinned rough brass taps	0 1 0	0 6 0
6th May	Coolangatta	Sale of milk without license	5 0 0	0 6 0
Totals	..	..	£43 18 0	£12 8 0

FISH SUPPLY.

Supervision over the fish supply of the metropolitan area has been exercised throughout the entire year by two officers of the headquarters staff. These two officers have inspected all fish coming into the Fish Market for auction at the two daily sales, and have examined fish in cold stores, fish depôts, and retail shops.

Fish arriving in Brisbane by steamer from overseas and by rail from other States has also received attention.

As a result of such inspections, these officers have condemned and destroyed as unfit for human consumption a total quantity of 39 tons 9 cwt. 1 qr. 19 lb. of assorted fish, 960 crabs, and 3 sacks of oysters.

Following are details of prosecutions launched against shopkeepers in connection with the sale of unsound crabs and oysters:—

Date.	Place.	Offence.	Fines.	Costs.
1937—			£ s. d.	£ s. d.
7th December ..	Brisbane ..	Sale of unsound crabs	1 14 0	0 6 0
1938—				
24th March	Brisbane ..	Sale of deteriorated oysters	4 14 0	0 6 0
Totals ..	..	..	£6 8 0	£0 12 0

LIQUOR INSPECTION.

Inspection of liquor stocks in hotel bars and cellars has been maintained. Booths at racecourses, Exhibition Ground, cricket and sports grounds have been regularly visited, and in every instance found satisfactory.

Following is a list of prosecutions taken against hotel-keepers in connection with the sale of spirits which did not conform to the Health Act:—

PROSECUTIONS OF LICENSED VICTUALLERS FOR 1937–38. (HEADQUARTERS.)

Date.	Place.	Offence.	Fines.	Costs.
1937—			£ s. d.	£ s. d.
5th August ..	Brisbane ..	Rum adulterated (license endorsed and premises placarded)	3 0 0	1 1 0
23rd September ..	Lowood ..	Rum (falsely described)	2 10 0	0 6 0
23rd September ..	Lowood ..	Whisky (falsely described)	2 10 0	0 6 0
1938—				
3rd February ..	Nambour ..	Rum adulterated	7 0 0	1 7 0
Totals ..	..	..	£15 0 0	£3 0 0

ICE-CREAM.

Supervision over the manufacture and sale of ice-cream has been maintained, and samples have, from time to time, been submitted to both chemical analysis and bacteriological examination. Ice-cream shall contain not less than 10 per cent. milk-fat and not more than 50,000 micro-organisms per c.c. The undermentioned prosecutions were successfully taken against vendors:—

PROSECUTIONS OF ICE-CREAM MANUFACTURERS.

Date.	Place.	Nature of Offence.	Fines.	Costs.
1938—			£ s. d.	£ s. d.
18th February ..	Ipswich ..	Use of unsuitable premises	1 0 0	0 6 0
29th March	Brisbane ..	Excess bacteria (4,081,000 micro-organisms per c. c.)	1 3 0	0 6 0
Totals ..	..	..	£2 3 0	£0 12 0

MINCED MEAT.

The addition of a preservative substance to minced meat is prohibited. A number of butchers, however, continue to risk prosecution for a breach of this provision, and following is a list of cases taken before a police magistrate during the year:—

PROSECUTIONS FOR ADULTERATED MINCED MEAT FOR YEAR 1937–38. (HEADQUARTERS.)

Date.	Place.	Quantity of Preservative. (Sulphur Dioxide.)	Fines.	Costs.
1938—			£ s. d.	£ s. d.
29th March	Brisbane ..	1·3 grs. per lb...	1 0 0	1 10 0
29th March	Brisbane ..	10·7 grs. per lb. (20·5 per cent. more than permitted under food regulations) ..	1 0 0	1 10 0
29th March	Brisbane ..	3·3 grs. per lb...	1 3 0	1 7 0
5th April	Brisbane ..	2·0 grs. per lb...	3 0 0	1 7 0
5th April	Brisbane ..	1·7 grs. per lb...	3 0 0	1 7 0
11th April	Brisbane ..	7·8 grs. per lb...	3 0 0	1 7 0
Totals ..	..	..	£12 3 0	£8 8 0

BREAD.

During the year a special survey of bakehouses in the metropolis was undertaken, and in a number of instances owners were required to make structural alterations in order to bring the premises into conformity with the requirements of the Food and Drug Regulations. The insanitary condition of one bakehouse called for legal proceedings, and details of this case and other prosecutions instituted against bakers are shown below:—

MISCELLANEOUS PROSECUTIONS OF BAKERS FOR YEAR 1937–38. (HEADQUARTERS.)

Date.	Place.	Nature of Offence.	Fines.	Costs.
1937—			£ s. d.	£ s. d.
25th August ..	Brisbane ..	Bread exposed to contamination	2 0 0	0 6 0
17th November ..	Harrisville ..	Unsuitable bakehouse	1 0 0	0 6 0
8th December ..	Brisbane ..	Insanitary bakehouse	2 0 0	0 6 0
Totals ..	..	..	£5 0 0	£0 18 0

GENERAL INSPECTIONS.

Visits were made by headquarter's officers to warehouses, retail stores, food factories, bond and free stores, auction marts, wharves, and other premises and places where food for sale is stored, manufactured, or prepared.

UNSOUND AND DETERIORATED FOODS.

Inspection resulted in the removal from sale and destruction of some 45 tons 12 cwt. 1 qr. 23 lb. of unsound and deteriorated foods and drugs, comprising confectionery, fish (canned), fruit, meats, nuts, olives, soups, vegetables, fruit juice, malt, patent medicines, and miscellaneous.

SAMPLING.

During the course of their duty and for investigation purposes inspectors of headquarters staff submitted 6,950 samples to the Government Chemical Laboratory for analysis and 2,023 specimens to this Department's Bacteriological Laboratory for examination.

The samples submitted to the Chemical Laboratory are dealt with in the Government Analyst's report and will not be enumerated here.

The specimens handed to the Bacteriologist include bread, bottles, corned beef, cream, disinfectant, flour, ice-blocks, ice-cream, milk, oysters, wheatmeal, and yeast.

FRUIT AND VEGETABLES.

During the period under review a careful check has been kept on the sale of fruit and vegetables in connection with the use of poisonous insecticides, and it was found necessary to proceed against two vegetable-growers for forwarding contaminated cabbages to the Brisbane market. Details of these cases are given below:—

PROSECUTIONS FOR SALE OF VEGETABLES CONTAMINATED WITH ARSENIC FOR YEAR 1937–38. (HEADQUARTERS.)

Date.	Place.	Article.	Fines.	Costs.
1937—			£ s. d.	£ s. d.
8th July	Brisbane ..	Cabbage	10 0 0	..
8th July	Brisbane ..	Cabbage	10 0 0	..
Total ..	..	..	£20 0 0	..

FOOTWEAR.

Inspection of stocks of boots and shoes has been carried out during the year, and, whilst no such articles were found to be misdescribed, minor breaches of the branding requirements were brought under notice and promptly rectified by manufacturers and retailers alike.

POISONS.

Careful supervision has been exercised by the Department's officers in the matters of the sale and keeping of scheduled poisons.

Special investigations were undertaken in regard to the prescribing by medical practitioners of narcotics and the handling and sale of dangerous drugs by chemists. As a result of these investigations, several professional men were called upon by the Medical Board or Pharmacy Board, respectively, to explain certain transactions with drugs, and, in consequence, one medical practitioner was suspended from practising his profession for a term of three months, one chemist was suspended temporarily, and the name of one chemist was erased from the register of pharmacists.

One unqualified person was proceeded against for having held himself out to be a medical man and that he issued a prescription for a Schedule No. 1 poison. A conviction was secured, and the police magistrate hearing the case imposed a penalty of £50.

A detailed list of prosecutions for breaches of the Poisons Regulations is given hereunder:—

POISONS PROSECUTIONS FOR YEAR 1937–38. (HEADQUARTERS).

Date.	Place.	Offence.	Fines.	Costs.
1937—			£ s. d.	£ s. d.
2nd July	Ipswich ..	Failure to record sale of poison	2 10 0	0 6 0
2nd July	Ipswich ..	Sale of poison to person unknown to seller ..	2 10 0	0 6 0
1938—				
31st March	Brisbane ..	Illegally writing prescription for a dangerous drug	20 0 0	0 6 0
31st March	Brisbane ..	Illegally writing prescription for a dangerous drug	30 0 0	0 6 0
Totals ..	..	..	£55 0 0	£1 4 0

TOBACCO LEAF.

A check on all tobacco leaf sold by auction has been continued, to ascertain that no dangerously contaminated leaf goes into the manufacture of smoking tobacco. As a result of continued sampling, growers are now exercising more care in the use of poisonous insecticides. Where analysis showed small quantities of arsenic adhering to the leaf, the growers concerned were advised accordingly and warned that the forwarding of contaminated leaf for sale would lead to same being seized under the provisions of the Health Act. In carrying out this work, the inspectors of the Head Office staff handled some 2,005 samples of tobacco leaf.

COUNTRY TOWNS VISITED.

In addition to their duties in the City of Brisbane, visits of inspection have been paid by officers of the Headquarters staff to the following places:—Amby, Adavale, Alberton, Augathella, Beaudesert, Beenleigh, Benowa, Bilinga, Booval, Bundaberg, Bundamba, Burleigh Heads, Caloundra, Canungra, Carrara, Charleville, Cheepie, Chinchilla, Coolangatta, Coomera, Cooroy, Cunnamulla, Dayboro', Dulacca, Eulo, Eumundi, Fernvale, Forest Hill, Gatton, Grandchester, Grantham, Gympie, Gympie Terrace, Ipswich, Jimboomba, Landsborough, Laidley, Loganholme, Maleny, Marburg, Maroochydore, Maryborough, Merrimac, Miami, Miles, Mitchell, Morven, Muckadilla, Mudgeeraba, Mulgowie, Mungallala, Mooloolaba, Nambour, Nerang, Noosa, Oxenford, Palm Beach, Palmwoods, Plainlands, Quilpie, Rathdowney, Redcliffe, Roma, Rosewood, Samford, Somerset Dam, Southport, Tambourine, Tambourine Mountain, Taroom, Tewantin, Thargomindah, Toompine, Tugun, Walloon, Wallumbilla, Wandoan, Warril View, Waterford, Wondai, Woombye, Wyandra, Yandina, Yatala, and Yeulba.

MACKAY.

The officer in charge of Mackay sub-office reports that inspections under the Food and Drug Regulations have been continued upon routine lines. Food stocks have been found in good condition and properly labelled.

Milk Supply.—Milk-sampling has been carried out at frequent intervals during the period under review, and a number of prosecutions were taken against milksellers, details of which are set out below:—

PROSECUTIONS OF MILK VENDORS (MACKAY OFFICE) FOR YEAR 1937–38.

Date.	Place.	Nature of Offence.	Fines.	Costs.
1937—			£ s. d.	£ s. d.
13th October ..	Sarina	Adulterated milk, 16 per cent. added water..	16 0 0	1 7 0
6th December ..	Bowen ..	Adulterated milk, 5 per cent. added water..	5 0 0	1 7 0
1938—				
21st January ..	Mackay ..	Use of unregistered premises	1 0 0	0 12 0
21st January ..	Mackay ..	Milk vessels without lids	0 10 0	0 12 0
21st January ..	Mackay ..	Use of unsuitable vehicle	0 10 0	0 12 0
22nd February ..	Mackay ..	Milk deficient in fat	5 0 0	1 7 0
Totals ..	..	..	£28 0 0	£5 17 0

Unsound Food.—A total quantity of 20 tons 8 cwt. 3 qr. 3 lb. of deteriorated and unsound food material was destroyed during the year as unfit for consumption.

Places Visited.—Outside of Mackay the following towns were visited, viz., Baker's Creek, Bowen, Calen, Carmila, Cedars, Dundula, Eimco, Eton, Eungella, Farleigh, Finch Hatton, Gargett, Hillend, Homebush, Kolijo, Leap, Marian, Miclere, Mirani, Mount Pelion, Nebo, Netherdale, Nindaroo, Pindi, Pinnacle, Pleystowe, Range, Retreat, Sarina, Seaview, Walkerston, Wundaroo, Yalbaroo.

Poisons Regulations.—Inspections under the Poisons Regulations reveal that, with the exception of minor breaches, the law as regards the packing and sale of poisons generally is being complied with.

Mileage Travelled.—In the course of his official tours the Mackay inspector travelled 400 miles by train and 502 miles by motor car.

TOOWOOMBA.

The officer in charge of the Toowoomba sub-office reports that the requirements of Part IV. of the Health Act have been satisfactorily complied with within the City of Toowoomba during the year under review.

Special visits of inspection were made to the following towns—viz., Allora, Cecil Plains, Chinchilla, Clifton, Cooby Creek, Dalby, Dulacca, Helidon, Jandowae, Miles, Milmerran, Pittsworth, Roma, Stanthorpe, Tara, Warwick.

Mileage Travelled.—Visits of inspection outside Toowoomba necessitated the officer travelling 2,256 miles by train and 542 miles by motor car.

Milk Supply.—Ninety-five official samples of milk were obtained for chemical analysis, and only one of this number was found to be adulterated with added water. There was a general improvement in the milk-fat content of samples analysed during the year, the improvement being attributable to the better dairying season experienced by milk producers.

Unsound Foods.—A total quantity of 1 ton 10 cwt. 2 qr. 26 lb. of unsound food material was removed from sale and destroyed. The foods concerned consisted of fish (fresh and canned), fruit (fresh, dried, and canned), jam, meat (canned), and vegetables. In addition, ten cases of apples were found to be contaminated with arsenical spray residue; the fruit having been treated for the elimination of the poison, its sale was permitted.

PROSECUTIONS FOR SALE OF ADULTERATED FOODS (TOOWOOMBA SUB-OFFICE) FOR YEAR 1937–38.

Date.	Place.	Nature of Offence.	Fines.	Costs.
1937—			£ s. d.	£ s. d.
22nd July	Texas	Whisky, adulterated	2 10 0	1 7 0
22nd July	Texas	Rum, adulterated	2 10 0	1 7 0
2nd August ..	Warwick ..	Rum, adulterated	5 0 0	1 7 0
16th August ..	Pratten.. ..	Rum, adulterated	5 0 0	3 9 0
1938—				
21st February ..	Toowoomba ..	Milk, adulterated (16 per cent. added water)	17 0 0	1 7 0
Totals ..	..	..	£32 0 0	£8 17 0

Poisons and Dangerous Drugs.—Special attention has been given to the sale of poisons and dangerous drugs, and the provisions of The Poisons Regulations of 1924 were found to be observed by chemists, storekeepers, and licensed dealers.

TOWNSVILLE.

The officer in charge of the Townsville sub-office of the Department reports that during the period under review a close watch has been kept on the conduct of wholesale and retail stores, cafés, milk-bars, and food factories, and the cleanliness of kitchens, dining-room linen, crockery, &c. Where improvement was necessary, defects were promptly corrected by occupiers on the issue of notices.

Milk Supply.—Supervision over the sale of milk has been maintained. As a result of analysis of samples submitted, three were found to be deficient in fat, whilst six were adulterated with added water. Cases in which legal action was taken against vendors are detailed below:—

PROSECUTIONS FOR SALE OF MILK ADULTERATED WITH ADDED WATER (TOWNSVILLE SUB-OFFICE) FOR YEAR 1937–38.

Date.	Place.	Added Water.	Fines.	Costs.
1937—			£ s. d.	£ s. d.
11th August	Ayr	10·9 per cent.	10 0 0	1 7 0
11th August	Ayr	9·0 per cent.	9 0 0	1 7 0
1938—				
28th January ..	Townsville ..	6·4 per cent.	6 0 0	1 7 0
28th January ..	Townsville ..	5·4 per cent.	5 0 0	1 7 0
28th January ..	Townsville ..	25·4 per cent.	20 0 0	1 7 0
28th January ..	Townsville ..	5·4 per cent.	5 0 0	1 7 0
Totals ..	..	..	£55 0 0	£8 2 0

Bakehouses.—Inspection of bakeries has been carried out, and bread weighed from time to time. In this connection legal proceedings are now pending against four bakers for having been in possession of loaves which were deficient in their due weight.

Unsound Foods.—A total weight of 1 ton 16 cwt. 2 qr. 9 lb. of foods found unfit for human consumption, by reason of being unsound or deteriorated, was destroyed under departmental supervision.

Poisons and Dangerous Drugs.—Regular inspections of chemists' shops, stores, and premises of licensed dealers in poisons were made under the Poisons Regulations of 1924, and where breaches of the law existed suitable action was taken to require compliance. In the case of a drug addict, action was taken to secure his committal to an institution with a view to restricting his supply of drugs.

ROCKHAMPTON.

The Department's officer at Rockhampton, apart from his work at that centre, also visited the following country centres in the course of his duties under Part IV. of the Health Act:—Aramac, Avondale, Barcaldine, Blackall, Bororen, Calliope, Emerald, Emu Park, Gladstone, Ilfracombe, Isisford, Longreach, Many Peaks, Marmor, Miriam Vale, Mount Larcom, Mount Morgan, Muttaburra, Raglan, Tambo, Yarwun, Yeppoon.

Milk Supply.—Careful attention was given by the Department's officer during the year to the work of supervising the milk supply of Rockhampton and other towns within his district. A total of 184 samples of milk were submitted for analysis from the following centres:—Rockhampton, 142; Barcaldine, 4; Blackall, 5; Emerald, 4; Gladstone, 8; Longreach, 7; Mount Morgan, 7; Yeppoon, 7. Prosecutions were instituted against seven vendors for having sold milk adulterated with added water, and one vendor with having sold milk which was deficient in milk-fat. Details of these cases are set out below.

Bread.—Strict supervision has again been exercised over bakehouses. Improvements have been effected where necessary. One bakehouse in a dilapidated and unhygienic condition was closed owing to the failure of the owners to reconstruct same to comply with the provisions of the Food and Drug Regulations.

The weight of bread was checked from time to time. Four bakers were convicted and fined in respect of bread weighed on the premises and found to be deficient in the due weight. Particulars of these prosecutions are given below.

Poisons.—Breaches of the Poisons Regulations of 1924 detected were as follows:—The illegal sale by storekeepers of Schedule No. 1 poisons; the failure of licensed poisons dealers to record in the prescribed manner sales of poisons made; the irregular sale of a small quantity of dilute hydrocyanic acid by a chemist. None of these breaches was considered to be sufficiently serious to warrant prosecution of the offender.

TABLE XXXIV.

MISCELLANEOUS PROSECUTIONS OF FOOD VENDORS IN CENTRAL QUEENSLAND FOR YEAR 1937–38.

Date.	Place.	Nature of Offence.	Fines.			Costs.		
			£	s.	d.	£	s.	d.
1937—								
24th November	Calliope	Bread short weight	2	0	6	0	6	0
10th December	Keppel Sands	Whisky falsely described	3	0	0	0	6	0
14th December	Aramac	Bread short weight	6	1	0	7	13	0
17th December	Longreach	Bread short weight	2	0	0	0	6	0
1938—								
12th January	Yeppoon	Milk, adulterated (10·9 per cent. added water)	10	0	0	1	7	0
20th January	Blackall	Milk, adulterated (10·9 per cent. added water)	10	0	0	1	7	0
7th March	Mount Morgan	Milk, adulterated (25·4 per cent. added water)	20	0	0	1	7	0
7th March	Mount Morgan	Milk, adulterated (10 per cent. added water)	10	0	0	1	7	0
7th March	Mount Morgan	Milk, adulterated (9 per cent. added water)	9	0	0	1	7	0
7th March	Mount Morgan	Milk, adulterated (8·2 per cent. added water)	8	0	0	1	7	0
25th March	Rockhampton	Milk, 54·5 per cent. deficient in milk fat	2	0	0	1	7	0
27th April	Rockhampton	Milk, measure without lid	1	0	0	0	6	0
27th May	Rockhampton	Milk, adulterated (9 per cent. added water)	9	0	0	1	7	0
17th June	Rockhampton	Bread, short weight	5	0	0	0	6	0
Totals			£97	1	6	£19	19	0

Samples of Foods and Drugs.—Thirty-nine samples submitted for analysis comprised brandy, rum, buns, condensed milk, cooking powder, aerated and brewed drinks, milk, pickles, solder, scrapings from refrigerator pipes, water, A.P.C. and headache powders and tablets, sarsaparilla compound, liniment, and lysol.

Unsound Foods.—Foodstuffs of a total weight of 6 cwt. 1 qr. 7 lb. were condemned and destroyed as being unfit for human consumption. These consisted of cheese, condensed milk, cordials, fish, jams and preserves, meats, and pickles.

Spirituous Liquors.—Testing of liquors on sale in numerous hotel bars failed to disclose any serious adulteration. One hotel proprietor was convicted and fined for having exposed for sale whisky which was falsely described. In this case several bottles bearing different proprietary labels had been filled with draught spirit from bulk. One line of brandy bottled outside the State was found to be deficient in the prescribed alcoholic strength. The local agents immediately withdrew from sale all unsold stocks.

CAIRNS.

The officer in charge of the Cairns sub-office reports that inspections under Part IV. of the Health Act and Regulations thereunder were carried out during the fiscal year. Outside the City of Cairns the following places were visited—viz., Daintree, Dimbulah, Feluga, Kuranda, Mareeba, Millaa Millaa, Mount Carbine, Silkwood.

Mileage Travelled.—Visits to the outside centres necessitated travelling 916 miles by train and 206 miles by motor-car.

Spirituous Liquors.—Liquors sold at licensed premises were periodically tested, and in no case did the circumstances warrant a prosecution for the adulteration of spirits.

Bread.—Bakehouses were examined, and minor breaches of the Food and Drug Regulations rectified. Bread was systematically weighed, but in no case were loaves found to be deficient in the due weight.

Milk Supply.—Thirty-six samples of milk were obtained and submitted to the Government Analyst. Of these samples, two were adulterated with added water, and one was deficient in fat.

Food and Drug Samples.—One hundred and forty unofficial samples of foods and drugs were submitted for tentative analysis. These samples included tobacco leaf, flour, sugar, cordials, A.P.C. headache powders and tablets, and crab meat.

Poisons.—The inspector reports licensed dealers in poisons, storekeepers, and chemists were found to be complying with the requirements of the Poisons Regulations of 1924. A special investigation elicited the fact that some person or persons, through thoughtlessness or carelessness, deposited a quantity of dangerous poisons on a public rubbish dump. The poisons were "souvenired" by children, who, fortunately took them to their parents, who realised their danger before any damage was done. The Poisons Regulations provide that it is an offence to place or leave any poison so that it is accessible to others.

SECTION OF MEDICAL SERVICES SUPERVISION.

A questionnaire was distributed to medical men registered in the State in the early part of 1938 to determine the feeling of the profession generally upon subjects which at that time and since have occupied a considerable measure of public interest. In particular these included the willingness of individual members of the profession now or at a future date, if called upon, to undertake, in association with the Department, full-time hospital work, part-time hospital work on a paid basis, part-time hospital work on an honorary basis, other institutional services, insurance practice, preventive medical services other than those obligatory under the Health Act and Regulations, and voluntary service with medical or social auxiliaries. The response from the medical profession was most gratifying, and represents a material change in the medical outlook in the course of the last few years.

In the first place more than 96 per cent. of the profession responded to the circular—an almost unprecedented total. Of these, 96 per cent. expressed their willingness to undertake part-time work on a paid basis; 92 per cent. expressed their willingness to undertake preventive medical services other than those obligatory under the Health Act and Regulations; 88 per cent. were agreeable to undertake institutional services, insurance practice, or voluntary service with medical or social auxiliaries; 81 per cent. were willing to undertake part-time hospital work on an honorary basis; and 79 per cent. were agreeable to undertake full-time hospital work if called upon.

Of the whole total, almost exactly one-third (34 per cent.) added some conditional clause, generally of a protective nature, as to terms and conditions. The remaining two-thirds expressed their willingness to co-operate unconditionally.

Closer association was also established with the Medical Board of Queensland, which, as constituted under "*The Medical Acts,* 1925 *to* 1935," consists of 7 members, 3 members and a president, appointed by the Governor in Council, and 3 members so appointed after nomination by the British Medical Association. Several references regarding the conduct of medical men were referred to the Board and dealt with by that body.

Under section 5 of "*The Hospitals Act of* 1936," the Director-General was given specific powers with regard to the selection of medical men for work in hospitals throughout Queensland. The section reads as follows:—

> "No appointment shall be made by a Board or committee of a medical superintendent or medical officer to any hospital until the Board or committee concerned has, by advertisement in some newspaper, called applications for such vacancy and has submitted all applications received by it to the Director-General for investigation by him and has received from the Director-General a report of his investigation.
>
> "No action, suit, or other proceeding shall be commenced, prosecuted, or maintained against the Government of Queensland, or against any Minister of the Crown, or against the Director-General of Health and Medical Services, or against any board or committee, or against any member or officer thereof, or against any member of the Public Service, or against any other person for or on account of any act, matter, or thing done or recommended to be done pursuant to this section."

Acting under this authority, appointments have been scrutinised in a large number of hospitals, and it has been possible to assure the appointment of men of ability and standing, and to obviate the accidental appointment of men unsuited either in character or ability to that type of hospital employment.

During the year, also, many applications for advice from hospital boards and committees, covering a wide range of subjects, have been received and dealt with.

Supervision of Private Hospitals.

Officer Inspecting: ABRAHAM FRYBERG, M.B., B.S., D.P.H., D.T.M.

During the year the officer inspecting visited all such institutions in the larger cities and towns of Queensland. Previous to January, 1937, these were supervised by the local authorities concerned.

Since that date 40 have closed as they were unable to comply with the provisions of the Private Hospitals Regulations, 1937. Alterations were necessary after inspection in 89 cases; 42 hospitals still remain to be inspected. It will therefore be seen that of the 173 hospitals inspected, action of various degrees had to be taken against 129.

Of the maternity hospitals, 10 are registered for three beds only and 12 for four beds.

Some of the licensees of this class of hospital are registered nurses under section 10 of the Nurses and Masseurs Registration Act. Many of these places were badly equipped and it would appear impossible, with such a small number of patients, to provide equipment and service profitably except in rare cases.

Of the 110 combined general and maternity hospitals, very few have, as yet, separate staffs and buildings.

In the near future steps will have to be taken to see that where maternity and general cases are treated in the one hospital, separate staffs are provided for the protection of the maternity cases.

The figures are tabulated below:—

Number of Private Hospitals when Department took control (January, 1937)		215
Number of Private Hospitals closed—		
Unable to comply with Regulations	34	
Closed by order (unqualified licensees)	6	
Destroyed by fire	1	
		41
Number still in operation		174
Classification of Hospitals—		
General cases only	10	
General and maternity cases	110	
Maternity only	52	
Mental	1	
Child Welfare	1	
		174
Number of general cases treated for six months ending 28th February, 1938		12,420
Number of maternity cases treated for six months ending 28th February, 1938		4,203

Alterations were necessary after inspection in eighty-nine cases.

During the year also a preliminary investigation was made into the question of infantile mortality from the social aspect. One hundred and ninety-five deaths of infants were investigated in all, and when compared with rates and causes in other countries certain tentative conclusions were possible.

The low infantile mortality rates in various countries have been regarded as a matter for jubilation among public health authorities generally. Unfortunately, it does not appear that the mortality rate is co-ordinated with the loss of life for *still-births*. In New Zealand, for example, a recent infantile mortality rate (1927) was 38·74 exclusive of still-births, but *including still-births it rose to* 68·08. In 1936, the figures were 30·9 and 58·7 respectively. In Brisbane correspondingly, the infantile mortality rate was 39·9, but no figure is available for still-births. Assuming the numbers equal in proportion in New Zealand and in Brisbane, the actual loss of infant life would be 70 per 1,000 live-births plus still-births, which gives little cause for congratulation.

A comparison of the rates of death amongst the 195 infants investigated shows a rate of 41·1 for males and 32·3 for females. This is a normal proportion, but the figures for illegitimate children are 76·6 and 97·2, which indicates a striking difference to the disadvantage of the little unfortunates lastmentioned. The probability is that this expresses itself largely through the economic stringency that affects unmarried girls, who are forced from their employment as pregnancy progresses.

If infantile deaths are graded roughly as—

(*a*) Those occurring within the first month of life; and

(*b*) Those who survive the first month but die before their first birthday—deaths in the first class were directly or indirectly due to causes operating before the actual birth of the child; deaths in the second group were from such conditions as faulty feeding, diseases of the respiratory tract, and so forth. The rate in the second group has fallen considerably; that in the former has been apparently little improved over a period of years.

In the former group 78 children died from "prematurity"*—in other words, 37 per cent. died in the first month of life from not being properly developed, if that diagnosis is accurate. It must also be borne in mind that the majority of still-births are premature. Of the 78 premature children 47 were first births.

Of the cases of prematurity, 35 were in women admitted to hospitals under the Brisbane and South Coasts Hospital Board.

The main causes of "prematurity" as far as shown in the maternal histories of these were albuminaria, eclampsia, and malpresentation. The histories did not disclose the cause in 12 cases. Some of those appear to have followed criminal interruption of pregnancy.

Of the 35 cases confined at the General Hospital, 13 attended the ante-natal clinics. Most of these came up about the fifth month of pregnancy, and had only attended once or twice before the onset of labour. Ignorance probably is a big factor, but facilities to attend an ante-natal clinic are not always available. The Government has been assiduous in providing maternity provision and most towns in Queensland have a maternity ward at the public hospital, and, therefore, facilities for ante-natal treatment—but, even here, there is room for improvement. The travelling baby clinic nurses could be given a special course of ante-natal training and could examine urines, &c., in a country town where no doctor is practising.

Looking through the list of occupations of the fathers of the infants who died, it is seen that of 190, 106 were on the basic wage, and 40 were skilled labourers, such as carpenters, engine-drivers, &c. This means that the wife in most cases must work practically up to the termination of her pregnancy, and immediately she returns home. It also means that she will have difficulty in attending for ante-natal treatment, as she might have young children or perhaps cannot afford the tram fare. It is worth considering that social aids or welfare nurses visit homes where mothers cannot attend the ante-natal clinic regularly. They could be assisted by trained or part-trained people who would help the mother in her household duties before and after the birth of the child.

A comparison of the infantile mortality rate for Brisbane—40—and of the rest of the State—35·6—is interesting. In America, the rural rate is higher than the urban rate, owing to the fact that many mothers are unable to have the necessary care, either for economic reasons because of inaccessibility, or through lack in their own communities of skilled medical and nursing care.

To return however to the question of prematurity, it is obvious that should the child be born prematurely it will be necessary for it to have skilled nursing treatment. During obstetric training, the amount of experience a nurse gets with premature babies is very limited. It would be helpful if all nurses appointed to take charge of maternity wards or hospitals possessed a child welfare certificate in addition to those for general nursing and obstetrics.

In some parts of America it is compulsory for a doctor or nurse to report premature births immediately by telephone to the health authorities; an incubator ambulance is immediately sent out to transport the premature infant to an adequately equipped hospital. Arrangements are made to obtain the mother's milk. A "mother's milk station" is established to make breast milk available to premature and other infants needing it.

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* For practical purposes the British College of Obstetricians and Gynæcologists has approved of a standard for "prematurity" on the basis of a birth weight not exceeding 5½ lb. (approximately 2,500 gms.), whether the estimated period of gestation is full time or not. They suggest the term "immature" if the estimated period is full time.

Another common cause of death during the first month is injury at birth. It will be seen from the records that there were 19 deaths due to this. Fifteen were attended by private practitioners; four were confined at the hospital.

In 1937, 1,646 infants were born at the hospitals under review while 3,861 were attended privately. The rate per thousand of deaths from "birth injuries" is 2·4 for the former, 3·8, or 66 per cent. higher, for the latter (on, of course, very few cases).

The obstetric slogan of "Watchful expectancy and masterly inactivity" is apparently not being carried out.

The co-operation of the British Medical Association should be sought so that lectures suitable for general practitioners should be given, amongst other things on the uses and abuses of forceps. Obstetrics, compared with other branches of medicine, is greatly underpaid; the practitioner is in a hurry and applies forceps so that he will not have to wait. The result generally is a torn perineum, and, often, a dead infant.

Another reason for the application of forceps is that the patient herself often says that "Dr. —— puts on forceps and his patient does not feel anything." Her medico must either use them against his better judgment, or lose the patient.

The measures for the reduction of foetal and neo-natal deaths are to a great extent the same as those for the reduction of maternal mortality, namely skilled medical and nursing care throughout pregnancy, at delivery, and during the post-natal period. The percentage of doctors who have not done any resident work, later than their student days, is great. Arrangements should be made for post-graduate training of general practitioners. Lectures could be given on subjects such as pre-natal care, toxaemias of pregnancy, conduct of labour, operative obstetrics, and puerperal infections; the lectures being such that they serve the needs of the general practitioner.

Knowledge of the care of the infant, the best methods of resuscitation and special measures to protect and care for premature infants must be added to knowledge of how to care for the mother, if infant lives are to be saved.

The question of domiciliary treatment is difficult to appraise. There are in the State many small hospitals supervised by women who were registered before 1912, and who have no idea of asepsis. It is better for a woman to be confined at home with a good nurse than in a private hospital with a bad nurse. Again, many private hospitals take in general and obstetric cases, having the same staffs for each. Here, too, domiciliary treatment is probably better.

The position might be summed up by saying it is better to treat a patient in a good hospital than in a good home; but that it is better to treat a patient in a bad home with a good nurse than in a bad hospital.

These observations are purely preliminary and tentative, being made as they are on a very small range of cases, as will be seen from the tables set out below.

It is also recognised that, to some extent, both the investigation of the cases and the suggested measures for correction have been the subject of isolated observation for a long period. More definite research on this matter will be undertaken in the Section of Infant Welfare in 1938-39, and the matter has also been referred to the National Health and Medical Research Council, which has placed it upon its agenda paper for discussion at an early date.

This very tentative inquiry indicates that—

(*a*) The registration of still-births is an important part of any study of infantile mortality; and might, with advantage, be compulsory;

(*b*) "Prematurity," whatever that diagnosis includes, has shown no reduction;

(*c*) Important aspects of this matter are illegitimacy and its attendant economic stringency; adequate care in training of women before marriage, to avoid disaster at first births; early detection of albuminuria; and adequate attention to eclampsia and malpresentation; and the whole question of abortion;

(*d*) In respect of birth injury, the better education of medical practitioners in regard to the application of forceps unnecessarily or too early;

(*e*) The better education of nurses in particular aspects of this subject, and the particular provision of social auxiliary services in association with hospitals or through private organisations;

(*f*) The better education of the public generally and the further development of the Government's plan for mutual co-operation between the public, the medical profession and the State.

TABLE XXXV.

Maternal Factors—Small Series—Brisbane Hospital.

A.

Number of mothers of premature babies (total 35) who had attended ante-natal clinics at the Brisbane Hospital	13
Number of mothers of babies who died of birth injuries and who had attended ante-natal clinics at the Brisbane Hospital	2
Number of mothers of premature babies at the hospital who did not attend ante-natal treatment	22
Number of mothers of babies at the hospital who died of birth injuries and who did not attend ante-natal treatment	2

B.

Causes of prematurity in the above series of	35
Albuminuria and eclampsia	7
Malpresentation	5
Ante partum haemorrhage	4
Multiple pregnancy	3
Cardiac condition	3
Not stated	12
Car ride	1

C.

Occupations of fathers when stated on certificate.

Unskilled men	106
Skilled men	40
Business men	6
Professional men	11
Farmers	6

D.

Cause of death of all first births.

Broncho-pneumonia	7
Pneumonia	1
Diarrhœa and enteritis	1
Hernia and intestinal obstruction	..
Prematurity	47
Malformation	9
Injury at birth	16
Congenital debility	4
Icterus, &c.	2
Other causes	16
Total	103

E.

Place in family of child who died.

First	103
Second	26
Third	28
Fourth	15
Fifth	6
Sixth	6
Seventh	1
Eighth	5
Ninth	2
Tenth	3
Total	195

F.

Age incidence of mothers who had premature babies—Metropolitan Area.

Under 19	2
19 and under 20	5
20 and under 21	4
21 and under 22	7
22 and under 23	5
23 and under 24	8
24 and under 25	3
25 and under 26	9
26 and under 27	1
27 and under 28	4
28 and under 29	5
29 and under 30	3
30 and under 31	1
31 and under 32	1
32 and under 33	3
33 and under 34	2
34 and under 35	3
35 and under 36	0
36 and under 37	4
37 and under 38	3
38 and under 39	2
39 and under 40	1
40 and under 41	..
41 and under 42	1
46	1
Total	78

TABLE XXXVI.

A.—Preliminary Inquiry: Causes of Infant Deaths.

Males.

Age at Death.	Broncho-Pneumonia.	Pneumonia.	Diarrhœa and Enteritis	Hernia and Internal Obstruction.	Prematurity.	Malformation.	Injury at Birth.	Congenital Debility.	Icterus, &c.	Other Causes.	Total.
Under 1 week	..	..	..	..	43 *7	8	13 *1	2	1	8	75 *8
1 week and under 2 weeks	..	..	..	..	2 *1	1	2	..	..	.. *1	5 *2
2 weeks and under 3 weeks	1	..	..	..	..	1	..	..	..	..	2
3 weeks and under 4 weeks	..	..	..	..	..	..	..	1	..	1	2
1 month and under 2 months	1	..	..	..	2	1	..	..	..	.. *1	4 *1
2 months and under 3 months	..	..	..	..	1	..	..	..	..	.. *1	1 *1
3 months and under 4 months	1	..	..	..	..	..	..	..	..	2	3
4 months and under 5 months	..	..	..	..	..	..	..	..	..	1	1
5 months and under 6 months	1	..	..	..	..	1	..	..	..	..	2
6 months and under 7 months	..	..	..	..	..	..	..	..	..	..	..
7 months and under 8 months	2	..	..	..	..	..	..	..	..	2	4
8 months and under 9 months	..	..	..	..	..	..	..	..	..	2	2
9 months and under 10 months	.. *1	..	..	..	..	..	..	..	..	..	.. *1
10 months and under 11 months	2	..	..	..	..	1	..	..	..	2	5
11 months and under 12 months	..	..	..	..	..	..	..	..	..	..	..
Total male deaths under 1 year	9	..	..	..	56	13	16	3	1	21	119

* Illegitimate.

B.—Summarised Deaths in respect of Legitimacy.

Males.

Infant mortality (*a*)	47·1	..	..	..	..	..	..	..	..	..	..
Total male ex nuptial deaths under 1 year	1	..	..	..	8	..	1	..	..	3	13
Infant mortality (*b*)	76·6	..	..	..	..	..	..	..	..	..	..

Infant mortality—

(*a*) Rate per 1,000 total live male births, which were 2,525.

(*b*) Rate per 1,000 ex-nuptial male births, which were 167.

TABLE XXXVI.—*continued.*

C.—Causes of Death.

Females.

Age at Death.	Broncho-Pneumonia.	Pneumonia.	Diarrhœa and Enteritis	Hernia and Internal Obstruction.	Prematurity.	Malformation.	Injury at Birth.	Congenital Debility.	Icterus, &c.	Other Causes.	Total.
Under 1 week	1	..	..	..	12 *4	7	2	..	2	5 *4	29 *8
1 week and under 2 weeks ..	..	..	..	..	2 *1	1	1	..	..	..	4 *1
2 weeks and under 3 weeks ..	..	..	..	..	1	2	..	1	..	..	4
3 weeks and under 4 weeks ..	..	..	..	..	..	..	..	..	..	..	..
1 month and under 2 months ..	..	..	..	..	1	..	..	..	1	1	3
2 months and under 3 months ..	..	..	..	..	.. *1	1	..	..	..	.. *1	1 *2
3 months and under 4 months ..	..	..	..	..	..	1	..	..	..	..	1
4 months and under 5 months ..	.. *1	1	..	1	..	1	..	..	..	1	4 *1
5 months and under 6 months ..	1	1	..	..	..	..	..	..	..	1	3
6 months and under 7 months ..	..	1	..	..	..	..	..	..	..	.. *1	1 *1
7 months and under 8 months ..	1	..	..	..	..	..	..	..	..	1	2
8 months and under 9 months ..	2	1	1	..	..	..	..	..	..	..	4
9 months and under 10 months ..	1	..	..	..	..	..	..	..	..	1	2
10 months and under 11 months	2	..	..	..	..	..	..	..	..	1	3
11 months and under 12 months	1	1	..	..	..	..	..	..	..	..	2
Total female deaths under 1 year	10	5	1	1	22	13	3	1	3	17	76

* Illegitimate.

D.—Summarised Deaths in respect of Legitimacy.

Females.

Infant mortality (*a*)	32·3	..	..	..	..	..	..	..	..	..	..
Total female ex-nuptial deaths ..	1	..	..	..	6	..	..	..	..	6	13
Infant mortality (*b*)	97·2	..	..	..	..	..	..	..	..	..	..
Total death under 1 year.. ..	19	5	1	1	78	26	19	4	4	38	195
Infant mortality (*c*)	39·9	..	..	..	..	..	..	..	..	..	..
Total ex-nuptial under 1 year ..	2	..	..	..	14	...	1	..	..	9	26

Infant mortality—

(*a*) Rate per 1,000 total female live births, which were 2,355.
(*b*) Rate per 1,000 ex-nuptial female births, which were 135.
(*c*) Rate per 1,000 total live births, which were 4,880.

LEGISLATION, &c.

An important departure during the financial year 1937-38 was the passage of "*The Health Act of* 1937," which came into operation by proclamation on 1st January, 1938.

Considerable alterations were necessitated in the Act by "*The Local Government Act of* 1936" and "*The Hospitals Act of* 1936." The Health Act as recodified, therefore represents a condensation of existing legislation rearranged, and with the addition of considerably greater powers and the correlation of several medical activities formerly governed by specific enactments, or controlled by other Departments of State.

The Act is divided into five parts, as follow:—

(1) Preliminary section;
(2) General powers;
(3) Prevention, notification and treatment of disease;
(4) Foods, drugs, and other articles;
(5) Miscellaneous provisions.

The Director-General, subject to the Minister, is charged with the administration of the Act, and any local authority may be required by Order in Council, to exercise and perform within a specified time, such of the expressed powers and authorities charged to it by the Local Government Act as he may deem necessary for the sufficient protection of public health in that locality. Local authorities are also to make such by-laws as the Director-General may deem necessary for protecting and maintaining the health of the inhabitants.

In the event of any local authority failing to carry out such requirements, the Director-General may himself take the necessary action, and make a levy or rate of sufficient amount to pay the debt; a loan may be advanced by the Treasurer to the Director-General for the carrying out of duties in this regard.

By Section 6, the Health Act, which has to some extent been vitiated in the past by other enactments, was again rendered paramount in all health matters—such matters being given very wide interpretation. The section indicates that, notwithstanding anything contained in any other Act or law or rule or process of law, no provision under the Health Act shall be deemed to be repealed or modified or amended by any other Act, whether such other Act has been passed before, on, or after the commencement of this Act, and no enactment contained in any other Act shall be deemed to prevent the Director-General, or any of his officers from carrying out the duties and exercising the powers, authorities, &c., conveyed or imposed upon them. Further, no enactment contained in any other Act shall prevent the enforcement and recovery of any penalty enforceable and recoverable under this Act, except where such would constitute a double penalty, and generally the provisions of the Health Act shall have effect and be enforced notwithstanding anything contained in any other Act.

Moreover, in section 15, the Director-General is empowered to cause to be made such inspections, investigations, and inquiries as he thinks fit in relation to any matters concerning the public health in any place, and also concerning any matters with respect to which the Governor in Council may so direct. He may also make orders as to who shall bear the costs of such inquiry, and when any such investigation is made, the Director-General shall have and exercise all the powers, authorities, and jurisdiction of a commission under "*The Official Inquiries Evidence Acts,* 1910 *to* 1929."

The usual powers in default on the part of a local authority are preserved, and special power is given to the Director-General to act in any emergency of which he shall be the judge. Any person aggrieved by the decision of a local authority can, moreover, address a memorial to the Director-General, stating the grounds of his complaint, sending a copy to the local authority, and the Director-General may make such order in the matter as to him seems just.

It is also provided in the section dealing with the notification of births, that any notification shall be in addition to and not in substitution for registration under "*The Births, Deaths and Marriages Act,*" "*The Infant Life Protection Act of* 1905," or any Act amending the same, and the Director-General may from time to time make regulations prescribing the forms to be used in anything necessary or convenient for giving full effect to the provisions of and the administration of this section.

Certain minor alterations have been made in the list of notifiable diseases.

By section 47, the Minister may provide for the medical and dental inspection of pupils in schools, an activity formerly under the control of the Department of Public Instruction. The Director-General may make orders closing any school or schools, on confirmation in writing by the Minister. The School Medical and Dental Inspection Branch was taken over from the Department of Public Instruction, and by Proclamation in the *Government Gazette* of 6th December, 1937, the designation was changed to "School Health Services."

Though vaccination is almost entirely neglected, as in other States, the provision regarding vaccination has been retained.

Important provisions have been made in respect of hookworm by section 50. The local authority may cause house to house visitations to be made in such part or parts of its area as may from time to time be defined by the Director-General to be a locality or localities affected or likely to be affected with hookworm, and cause examination to be made of all persons residing in such localities, which shall include the taking of necessary specimens.

An attempt has been made in respect of hookworm, leprosy, tuberculosis, and venereal disease, to introduce an intermediate section which shall more obviously be the province of the central office, although the routine care of exanthemata is specifically allocated to local authorities.

The position occupied by infantile paralysis, and particularly the after-care of sufferers from this disease, are as yet undetermined. Infantile paralysis is not listed as an infectious disease, though it is a notifiable disease, and, as such, the charges for after-treatment do not fall upon the local authority. On the other hand, specific provision was made for its control under regulations drawn several years ago for the purpose, and repeated in 1937. All other circumstances are met by orders issued from the Head Office of the Department by the Director-General in pursuance of the powers vested in him for the control of emergencies.

With regard to leprosy, relevant provisions are now included in the Health Act by section 51, and among them the Director-General has obtained authority for the examination by clinical and bacteriological methods of all contacts at such times and at such places as he may appoint, and, in the event of refusal, for the exercise of such degree of necessary force as may be required. This provision for the repeated examination of contacts is a necessary and useful power.

In respect of lepers on parole, any breach of instructions shall be deemed to cancel the parole, and the person concerned may, without any further or other order, be returned to the lazaret.

With regard to tuberculosis provision is made for regulations governing the examination, isolation, restriction, detention, treatment, and welfare of persons found to be affected or likely to be affected with tuberculosis in any form.

Section 58 prohibits advertisements intended to promote the sale of any article as a medicine, instrument, or appliance for the alleviation or cure of any venereal disease, or disease affecting the generative organs or functions or of sexual impotence, or of any complaint or infirmity arising from or relating to sexual intercourse or of female or menstrual irregularities, and further adds that no person shall cause to be published any statement indicating or suggesting that any person offers or is willing or has power to treat, attend upon, or alleviate or cure any such disease or complaint or infirmity, or inviting or suggesting that any person should in any way be consulted by any other person for the purpose of such treatment, attention, alleviation, or cure, or any examination for any of such purposes. The section is qualified by stating that before any proceedings are taken the Director-General shall notify the proprietor, printer, or publisher of such newspaper that the publication of the matter complained of is an infringement of this section, and that liability shall not be incurred except in respect of an offence after notification.

Section 61 deals with industrial hygiene, and provides for investigation by the Director-General into matters affecting industrial hygiene without limiting the general power of investigation into any subject. Particular reference is made to—

(*a*) Ventilation, cleanliness, lighting and standards of temperature according to the nature of the industry;

(*b*) Safety devices;

(*c*) Accommodation for employees;

(*d*) Industrial diseases;

(*e*) Generally into such matters and things as are considered to be conducive to the health and wellbeing of employees in industry generally, or in any particular industry;

and in these respects also, the Director-General has the powers of a commission, and full powers of entrance.

Infirmity is dealt with in Section 62, which provides that, where a justice is satisfied on the application of a local authority, that any person is affected with tuberculosis or suffering from an incurable disease or infirmity, or incapable of caring for himself, and is without proper care, lodging, or accommodation, such justice may order such person to be removed to a hospital or a charitable institution.

"The Private Hospitals Regulations of 1937" are brought within the general purview of the Act as Division XI. They are directly brought into relation with the Director-General, who has very extensive powers in that regard.

A new and important section (s. 100) which will assist local authorities, and particularly those in charge of seaside and other pleasure resorts, gives power to the Director-General to make regulations for the control and regulation of camping grounds, either public or private, and/or moveable dwellings, and the last expression is defined to include any tent, any van, or other conveyance, whether on wheels or not, which is used regularly or at certain times only, for human habitation.

Apart from *"The Health Act of* 1937" certain regulations were repeated during the financial year 1937-38, and in particular—

1. "The Anterior Poliomyelitis (Infantile Paralysis) Regulations, 1937."
2. "The Camp Regulations, 1937."
3. "The Diphtheria Regulations, 1937."
4. "The Mosquito Prevention and Destruction Regulations, 1937."
5. "The Plague Prevention Regulations, 1937."

EXTRA-DEPARTMENTAL ARRANGEMENTS; STAFF APPOINTMENTS, &c.

National Health and Medical Research Council.

The National Health and Medical Research Council of the Commonwealth of Australia, which, as mentioned in the last Annual Report, was constituted towards the end of the year 1936 and met for the first time in Hobart, Tasmania, in 1937, met subsequently in January, 1937, at Canberra, Federal Capital Territory, in November, 1937, at Sydney, New South Wales, and in May, 1938, by invitation of the Minister for Health and Home Affairs, at Brisbane, Queensland. The Director-General of Health and Medical Services (Sir Raphael Cilento) attended each of these conferences as the official representative of the State of Queensland.

The resolutions taken by the Council cover a very wide range of subjects. General considerations related to research and the provision of subsidies for that work, maternal morbidity and mortality, hygiene of childhood, tropical physiology and hygiene, the prevention of blindness, dental research, nutrition and food research, public health education in the matter of travelling fellowships, and particularisation of these subjects such as the pasteurisation of milk, the question of leprosy, undulant fever, rheumatic conditions, poliomyelitis, hydatid disease, the problem of abortion, the demineralisation of flour, &c.

In association with the National Health and Medical Research Council there are certain committees for particular matters, as, for example, the Committee on Obstetric Research, the Committee on Dental Research, the Committee on Tuberculosis, the Committee on Tropical Physiology and Hygiene. These committees are, as a rule, convened by a senior member of the staff of the Commonwealth Department of Health for the sake of administrative convenience.

The lastnamed—the Committee on Tropical Physiology and Hygiene—has particular importance in Queensland, and, as is natural, this State is strongly represented by the Director-General (Sir Raphael Cilento); the Director of the Division of Micro-biology and Pathology (Dr. E. H. Derrick); and the Professor of Physiology of the University of Queensland (Professor D. H. K. Lee). The Chief Quarantine Officer (General) for the North-eastern Division of the Commonwealth Department of Health, which includes Queensland and the Northern Territory of Australia (Dr. P. W. Mitchell); and Dr. A. Baldwin, of the Sydney School of Public Health and Tropical Medicine, and Dr. F. McCallum (convenor), who were each formerly stationed in this State, are the remaining members.

The Brisbane conference was opened by the Minister for Health and Home Affairs, Queensland, and, *inter alia,* the programme for tropical physiology and hygiene prepared by the committee mentioned was adopted as were also recommendations for two investigations—one into short period fevers in North Queensland, and one into the histology of lead nephritis and its comparison with other types of nephritis—and an investigation of the effects of various drinking waters on lead poisoning, in experimental animals.

A progress report of the investigation into leprosy in Queensland, to which reference was made under that heading earlier in this report, was printed as an appendix to the report of the National Health and Medical Research Council.

The members of the Council attended the opening of the Radon Laboratory recently established here, inspected the newly-opened Women's Hospital and also the Medical School for the University of Queensland, which is being built at Herston road by this Department, and is now nearing completion.

It was particularly unfortunate, since many of the members from other States had never previously visited Brisbane, that the period of their stay was marred by unexpected and almost continuous rain, over 10 inches of rain falling in five days.

Commonwealth Advisory Council on Nutrition.

The Commonwealth Government, as mentioned in last annual report, established also in the early part of the year 1936 an Advisory Council on Nutrition, to which the Director-General in his capacity as Professor of Social and Tropical Medicine was appointed by the University of Queensland as its representa tive. Professor D. H. K. Lee was subsequently added as co-delegate.

The first meeting was held in January, 1936, and was succeeded by meetings in September, 1936, January, 1937, October, 1937, and February, 1938. The final meeting is to be held in July, 1938.

Though it has been arranged that the work of the Council as such will be finalised by this lastmentioned meeting, it was considered that the subject was of sufficient importance to merit permanent attention. It was accordingly recommended that a Committee of Nutrition should be set up in line with those previously mentioned as a Committee of the National Health and Medical Research Council, and reporting to it for action. It was thought that it might best comprise, under a Commonwealth convener, the Professors of Physiology and Biochemistry in the four Australian Universities having medical schools.

The work of the State Nutritional Advisory Board of Queensland, which was constituted in February, 1937, and is the official representative of the Commonwealth body, has to some extent waited upon the final report of the Commonwealth Advisory Council. This matter is, however, dealt with more fully in Appendix A which is the report of the State Nutritional Advisory Board's activities.

MEDICAL FACULTY—UNIVERSITY OF QUEENSLAND.

The activities for co-ordination and correlation of public health teaching as between the University and the Department of Health have been further advanced during the year in respect of the course of medical training for students of the Faculty of Medicine. In his lectures as Professor of Social and Tropical Medicine the Director-General has been ably assisted by Dr. E. H. Derrick, Dr. D. W. Johnson, and Mr. D. J. W. Smith of this Department. This assistance was very greatly appreciated. The Minister has been pleased to approve this arrangement, and has, moreover, provided these services free of charge to the University as a gesture of goodwill and co-operation.

Lectures commenced in February, 1938, as part of the fourth year course, and comprised the subjects of parasitology and tropical medicine.

At the close of the financial year, students were passing to the consideration of the preliminary aspects of public health and preventive medicine, industrial hygiene and disability, forensic medicine and toxicology, which will be continued through 1938-39.

REORGANISATION—BRISBANE HOSPITAL.

The introduction of medical students to the Brisbane General Hospital necessitated the review and reappraisal of the activities of that institution. With this object in view a Committee for Reorganisation was convened by the Brisbane and South Coast Hospitals Board, and the Director-General was appointed chairman. The report of the committee was submitted to the Minister and its adoption was followed by considerable changes, which are now in course of institution.

More intimate association between the Department, the University, and the hospitals is and will doubtless continue to be of increasing mutual benefit.

NATIONAL HEALTH INSURANCE.

The notification of the intention of the Commonwealth Government to institute at an early date a scheme for national health and pensions insurance naturally affected to a considerable degree the question of medical provision from hospitals in this State.

A committee of which the Director-General was one was accordingly set up by the Under Secretary, Chief Secretary's Office, on behalf of the Premier, to investigate the situation in so far as it was known, and to report upon the possible repercussions in Queensland.

A report was furnished accordingly.

STAFF.

The Deputy Director-General (Dr. J. Coffey) continued to fill the position of Inspector-General of the Insane. During the occasional absence of the Director-General Dr. Coffey undertook the duties of the position in terms of the Act.

Dr. E. H. Derrick attended the Australasian Medical Congress (British Medical Association) in Adelaide in August, 1937, and delivered a paper on the researches in respect of those fevers which have been for some years the subject of intensive investigation in this Department. The address was well received and attracted considerable attention.

Dr. Fryberg and Dr. Johnson were called upon to undertake a very considerable range of added duty owing to the outbreak of poliomyelitis. The activities referred to elsewhere were largely supervised by these officers with conscientious devotion to duty.

Dr. Johnson, formerly temporary medical officer, was appointed Medical Officer, Laboratory (Mobile Unit), as from 1st October, 1937.

As from 3rd May, 1938, Mr. C. L. Greaves was appointed Cadet, Laboratory.

PUBLICATIONS.

Publications emanating from the Department have been mentioned in association with the report of the Section of Laboratories and Microbiology.

ACKNOWLEDGMENTS.

It is felt that the record of the Department for the twelve months ended 30th June is one of sustained progress. It has been possible to implement the programme of the Government in directions hitherto unexplored, and the establishment of a co-operative scheme of development between the professional side of the Department, the Medical School of the University, the hospitals, and the health activities of the various local authorities has proceeded rapidly.

I desire to express my hearty thanks for the loyal co-operation of the staff, particularly the heads of sections, during the past year, and also to express my gratitude for much assistance from other departments, particularly the Police Department, the Department of Public Works, the Department of Public Instruction, the Lands Department, and the Department of Agriculture and Stock.

RAPHAEL W. CILENTO,
Director-General of Health and Medical Services.

30th June, 1938.

APPENDIX A.

STATE NUTRITIONAL ADVISORY BOARD.

YEAR 1937-38.

This Board was constituted by Executive Minute, dated 18th February, 1937, published in the *Government Gazette* of 20th February, 1937. The membership is as follows—

Sir Raphael West Cilento, Kt. M.D., B.S., D.T.M. and H., Director-General of Health and Medical Services; and, Professor of Social and Tropical Medicine in the University of Queensland, Brisbane; (Chairman);

Edward Holbrook Derrick, M.D,. Director, Division of Laboratories and Microbiology, Department of Health and Home Affairs, Brisbane;

Leslie St. Vincent Welch, L.R.C.P., M.R.C.S., Chief Medical Officer, School Health Services Branch, Department of Health and Home Affairs, Brisbane;

Aubrey David Dick Pye, M.B., Ch.M., F.R.C.S., F.R.A.C.S., General Medical Superintendent, Brisbane and South Coast Hospitals Board;

Leon Alexander Meston, A.A.C.I., Analyst, Department of the Government Analyst; and

Douglas Harry Kedgwin Lee, M.B., B.S., D.T.M., Professor of Physiology in the University of Queensland, Brisbane.

In Paragraph (9) of the Schedule which outlines and defines the functions of the Board, it is stated that, with the approval of the Minister, members may be co-opted to this Board, and such approval having been obtained, the following members were co-opted:—

Paul Wanostrocht Mitchell, M.B., Ch.M., D.T.M., Chief Quarantine Officer (General), Department of Health for the Commonwealth, Brisbane; and

Clarence Murrell Cato, Acting Chief Inspector of Food and Drugs, Department of Health and Home Affairs, Brisbane.

In accordance with paragraph (10) of the Schedule, it is the duty of the Board to furnish an annual report to the Minister upon its activities and the following information is submitted.

In view of the paramount authority given to this Department by *"The Health Act of 1937,"* in all matters affecting the public welfare, in respect of health and of the fact that the Board is an official body constituted by Executive Minute by the Minister for Health and Home Affairs, an invitation was issued to the Chairman of the Commonwealth Advisory Council on Nutrition (Dr. J. H. L. Cumpston) to recognise the Board as its official representative in Queensland. The matter was discussed at the meeting of that body held in October, 1937, and recognition was readily accorded, the Chairman, in a subsequent letter, expressing his pleasure at the active interest shown by the Minister for Health and Home Affairs.

During the year the State Nutritional Advisory Board adopted an attitude of expectancy while awaiting the determination of the intensive investigations of the Commonwealth Advisory Council on Nutrition. It co-operated actively in the collection of records, all of which passed through the central office of this Department; and it provided facilities both to local workers and to Commonwealth officers engaged in particular investigations.

The matters undertaken by that Council which are of the greatest interest to Queensland are:—

(*a*) The study of the figures provided by the domestic food record booklets;

(*b*) The survey of nutrition and malnutrition among children in the far west of Queensland; and

(*c*) The investigation into the mineral content of certain foods in Queensland.

With regard to the domestic food record booklets, it was early apparent that the diets recorded might be taken to represent the diet of a good average family living comfortably, rather than that of a family living close to the minimum standard for existence. As the investigation proceeded, this trend become more and more marked, the households which continued with the inquiry tending to be those of intelligent persons with a well-run commissariat, and to exclude any large number of persons living alone, and, obviously, also excluding householders too careless, or too prejudiced to co-operate with the survey. Nevertheless, the last mentioned classes are precisely those whose food data are essential to an adequate picture. The Advisory Council was well aware of this discrepancy, but no feasible means of meeting the situation more completely presented themselves.

From the report made by Dr. F. W. Clements, it is evident that a considerable number of children in the outback show signs of unsatisfactory nutrition, and this is a situation common in each of the four States examined. In Western Queensland Dr. Clements considered that 18·8 per cent. of the children examined showed signs of unsatisfactory nutrition, as compared with 23·7 per cent. of the children in the series from western New South Wales.

The results from various sources bring into sharp focus two distinct problems—(1) the problem of the under-nourished city child, and (2) the problem of the under-nourished child in the remoter outback districts.

The report submitted to the Council by Professor Lee, relating to the investigation carried out in Queensland to determine the mineral content of eggs, fish, vegetables, wheat, and wheat products, and other cereals, conflicts in certain respects with the clinical observations of Dr. Clements and of other observers. Professor Lee's figures indicate that common Queensland foods do not differ markedly from recognised standards in respect of calcium, magnesium, sodium, potassium, phosphate, and phytin content.

Since the observations made by officers of this Department for many years, Dr. Clements' observations in the west, and many other recorded enquiries, include repeated clinical recognition of certain mineral deficiencies, it seems that any undue incidence of human mineral imbalance in Queensland may be due to an inadequate consumption of mineral-containing foods in relation to the body requirements in the particular localities concerned; or, to a failure of assimilation of their mineral content, rather than to a deficiency of minerals in the foods themselves. Obviously this might be due either to a reduced consumption, or to an increased requirement of these mineral essentials as a result of particular environmental factors.

This report of the nutritional survey of inland Australia (particularly the reference to western Queensland), is included in the Fourth Report of the Advisory Council on Nutrition, 1937, as Appendix I. pp. 9 to 20 inclusive.

The findings of the Council, although known, will not be anticipated in this report since they will be discussed at a meeting of that body to be held in July, 1938. In any case, the findings will be of a general nature.

On the conclusion of the activities of the Commonwealth Advisory Council (except in so far as they may be continued under a Committee for Nutrition established in relation to the National Health and Medical Research Council) these findings should be elaborated in detail as opportunity serves by the States, the problem of nutrition being one aspect of the care of the domestic welfare of the people with which State Governments are entrusted.

The indications, particularly with regard to Western Queensland, are striking, and it is strongly recommended that they be followed to their natural conclusion, and that the recommendation so indicated be implemented. With this object, it is recommended to the Minister that steps be taken to correlate all worthwhile activities in respect of nutritional investigation in Queensland in relation to the Board.

The State Nutritional Advisory Board, as such, continued its investigations into aboriginal diet, bread standards, the composition of aerated waters, "kopai" water, labelling of food containing acid phosphate, &c.

In conjunction with the Chief Protector of Aboriginals (Mr. J. W. Bleakley) something has been done to improve the diet at stations under the control of the Aboriginal Department. Special reference was made by the Board to the food value of the potato, and also to the possibilities in respect of lucerne, both of which have a high food value and might be so provided or prepared for aboriginals that they might become a valuable addition to diet. The suggestion regarding lucerne, which was interesting, was advanced by Mr. L. A. Meston and supported by an abstract from the Biochemical Journal* of 1935 as follows:—

"The antiscorbutic value (of lucerne) is of a high order being frequently more than four times that of the same weight of orange juice.

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* "Antiscorbutic Value of Lucerne" (Levy and Fox, Biochemical Department, South African Institute for Medical Research, Johannesburg, South Africa).

"Lucerne is also of value since it contains not less than 1-2 per cent. of mineral salts of which nearly 0·5 per cent. is calcium. In addition 8 milligrams of iron are present per gram or nearly double that found in spinach.

"We learn from several sources that green lucerne is actually used to some small extent as a human food in parts of Russia, China, and America, whilst in South Africa it is occasionally used as a substitute for spinach. It has also been incorporated into the special cereal mixtures devised by Brown and Tisdall (1933) and used by them with conspicuous success in the feeding of small children. Much of the vitamin remains after cooking. Lucerne is also a rich source of vitamins A and E.

"The possibility of using certain types of the young plant as a human food, either as green salad spinach or in the form of dry meal is worth consideration.

"Occasionally lucerne has been the cause of death of animals. Death is probably due to excessive fermentation which it appears is likely to take place when large amounts are consumed, especially if the plant is in a young frosted or wilted condition.

Vitamin content ("Feeds and Feeding," Morrison)—

A.	B.	D.	E.	G.
+++	+	++	+++	++.

Considerable discussion has continued during the year with the Master Bakers' Association of Queensland, and these discussions extended to the whole Commonwealth when the Secretary of the local organisation (Mr. E. Heindorff) was appointed also Secretary of the Federal Master Bakers' Association of Australia and the Dominion of New Zealand.

A suggestion was put forward by the Federal Master Bakers' Association that there should be a Federal Research Institute for the benefit of the bakers of the Commonwealth, and the Chairman was requested to put this proposal before the National Health and Medical Research Council as its session in Brisbane. It was decided, after discussion by the Board, that a better proposal would be the institution of an Institute of Food Research, and that this might work in association with local schools of baking. The matter was accordingly put before the Council which, in its turn, referred it to the Commonwealth Advisory Council on Nutrition, where it will receive attention during the July meeting.

With regard to bread, certain tentative proposals for correction of the description of the products at present on the market in Queensland were arrived at as follows:—

1. *Whole-wheat Flour, Entire Wheat-flour, Wheatmeal.*—Whole-wheat flour, entire wheat flour, or wheatmeal is the product obtained in the commercial milling of cleaned and sound wheat. It shall contain, in their natural proportions, all of the constituents of such wheat.

It shall contain—

(*a*) Not less than one and five-tenths parts per centum of nitrogen; and
(*b*) Not more than fourteen parts per centum of moisture.

It shall contain in its water free substance—

(*a*) Not less than two and two-tenths parts per centum of crude fibre;
(*b*) Not less than two and two-tenths parts per centum of etheric extract; and
(*c*) Not less than one and eight-tenths parts per centum of ash.

It shall not contain any foreign substance.

2. *Flour, Wheat Flour, White Flour.*—(A.) Flour, wheat flour, or white flour is the fine-ground product obtained in the commercial milling of cleaned, sound wheat. It consists essentially of the starch and gluten of the endosperm of such wheat.

It shall contain—

(*a*) Not less than one and five-tenths parts per centum of nitrogen.
(*b*) Not more than thirteen and five tenths parts per centum of moisture;
(*c*) Not more than five-tenths of one part per centum of fibre; and
(*d*) Not more than two and five-tenths parts per million of nitrite calculated as sodium nitrite ($NaNO_2$).

It shall contain no other foreign substance.

(B.) Flour specifically sold or used for the making of bread may contain (calculated on a dry basis) calcium phosphate (calculated as $CaH_4(PO_4)_2$) in amount not exceeding three-tenths of one part per centum and/or calcium sulphate in amount not exceeding two twenty-fifths of one part per centum.

It may also include such minute amounts of other approved* salts as serve solely as yeast nutrients.

3. *Bread.*—Bread is the product obtained by properly baking a leavened and kneaded mixture of whole-wheat flour and/or white flour, potable water, yeast and salt, with or without the addition of milk, milk product, malt extract or edible fat.

It shall contain—

(*a*) Not more than forty-five parts per centum of water in any part of the loaf;
(*b*) Not more than two parts per centum of ash; and
(*c*) Not more than one-tenth of one part per centum of ash insoluble in deci-normal hydrochloric acid.

Ten grammes of the crumb taken from any part of the loaf shall not contain more acid than is required to neutralise 0·009 gramme of sodium hydroxide.

Provided that the presence of calcium phosphate and calcium sulphate prescribed by the labelling provisions of the Regulations in amounts not exceeding those specified shall not be deemed to be a contravention of these Regulations.

4. *Wholemeal Bread or Wheatmeal Bread.*—Wholemeal bread or wheatmeal bread shall be bread prepared from whole wheat flour with or without the addition of twenty parts per centum of white flour and other permitted ingredients.

It shall conform with the general standard for bread.

5. *Brown Bread.*—Brown bread shall be bread prepared from a mixture of whole wheat flour and white flour containing not less than sixty parts per centum of whole wheat flour, with or without the addition of other permitted ingredients.

It shall conform with the general standard for bread.

6. *White Bread.*—White bread shall be bread prepared from white flour with or without the addition of other permitted ingredients.

It shall conform with the general standard for bread.

7. *Other Breads.*—Barley Rye, and other Grain Breads.

(*a*) Barley bread, rye bread, or bread made from grain other than wheat grain shall be bread prepared from the meal obtained by grinding cleaned and sound grain with or without the addition of other permitted ingredients.
(*b*) If any such bread bears a name descriptive of its kind, composition, or origin, it shall correspond thereto.

It shall conform with the general standard for bread.

8. *Milk Bread.*—Milk bread shall be prepared from wholemeal flour and/or white flour and milk or its equivalent—milk solids and water conforming to the standard for milk in milk solids—with or without the addition of other permitted ingredients.

It shall conform with the general standard for bread.

9. *Germ Bread.*—Germ bread or bread said to contain added wheat germ, shall be bread prepared from whole-wheat flour and/or white flour containing not less than ten parts per centum of wheat germ with or without the addition of other permitted ingredients.

It shall conform with the general standard for bread.

10. *Raisin Loaf, Currant Loaf, Sultana Loaf.*—

(*a*) Raisin loaf, currant loaf, or sultana loaf shall be bread prepared from whole wheat flour and/or white flour with or without sugar and other permitted ingredients.
(*b*) It shall include raisins, currants, or sultanas, singly or in the aggregate, at the rate of not less than three ounces to the pound. It shall conform with the general standard for bread.

11. *Bread Not Elsewhere Standardised Herein.*—Bread not standardised herein for which special nutritional properties is claimed is subject to the following provisions:—

(*a*) It shall conform with the general standard for bread;
(*b*) It shall include no substance for which special nutritional properties are claimed until such substance is approved by the Director-General in writing;
(*c*) It shall contain not less than one and five-tenths parts per centum of nitrogen in its water-free substance.

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*Approved by the Director-General of Health.

12. *Diabetic Bread and Diabetic Flour.*—Bread or flour which is sold or described as suitable for persons suffering from diabetes shall be labelled, and in the label there shall be written in letters of not less than ten points type the percentage, proportions, and the nature of the carbo-hydrates, fats, and proteins, and the caloric value per ounce, of such food; where present glycerine or saccharin shall also be declared.

These descriptions are referred for consideration as desirable modifications of existing descriptions, which no longer describe the composition of bread in Queensland, and are out of touch with modern baking practice.

Apart from the matter of bread, the question of *yeast utilisation* was discussed, but the subject assumed considerable dimensions. It is therefore hoped shortly to arrange a conference on this subject between members appointed from the Board, representatives of the Department of Agriculture and Stock, and representatives of the trades concerned.

Attention was also directed towards *labelling of food containing acid phosphate,* following receipt of a letter from Imperial Chemical Industries on this subject. The practice of using acid phosphate began when the price of cream of tartar was greatly increased some years ago, and at the present time self-raising flour containing cream of tartar is always sold at a higher price than that containing acid phosphate. It was decided to submit the letter received from Imperial Chemical Industries to other States and to the Biochemical Department of the University of Sydney for comment. This was accordingly done, and replies are awaited.

The question of *beverages labelled as fruit drinks* and intended for children is also under discussion. Many of these drinks are prepared from synthetic essences in a country which produces large quantities of fruit. Manufacturers of aerated waters have been circularised on the matter in respect of fruit content, labelling, and trade usage. Various replies have come to hand, and the questions raised will be discussed at an early date.

The question of *"kopai" water* was referred by a medical practitioner of Western Queensland, who forwarded a sample of "kopai" together with a communication as to the symptoms that follow its use. Special reference was made to the occasional occurrence of urethritis in unaccustomed persons. The specimen forwarded consisted chiefly of hydrated calcium sulphate (gypsum, $CaSO_4{\cdot}2H_2O$). On analysis it gave the following figures:—

	Grains per Gallon.
Total solids	169·4
Loss on ignition (water, organic matter, &c.)	36·0
Total solids after ignition	133·4
Chlorides (calculated as $NaCl$)	5·8
Alkalinity (calculated as $CaCO_3$)	5·6
Sulphates (calculated as $CaSO_4$)	127·8
Hardness—degrees Clark	77 deg.

The total solids had a yellowish brown colour, and on ignition gave off an odour suggesting burnt sugar from the burning of a little organic substance present.

It has been suggested that "kopai" water is of particular value for worms in sheep, because these are not commonly found in areas in which it occurs. The relative absence of worms in "kopai" areas, however, is climatic rather than due to the presence of "kopai," in the opinion of Dr. Roberts, parasitologist at the Department of Agriculture and Stock. Analysis shows that the material is almost entirely calcium sulphate, and unfortunately there are no grounds for believing that the presence of these salts has any influence on worm infestation. The claim generally made concerns worms in the alimentary tract. Professor Seddon, Professor of Veterinary Science in the University of Queensland, was good enough to obtain this information for the Board from Dr. Roberts.

With the publication of the final report of the Commonwealth Advisory Council on Nutrition, this Board will feel free to proceed further with the compilation of a publication on nutrition and cookery, the material for which has been in hand for some time.

For the Board,
RAPHAEL W. CILENTO, Chairman.

Appendix B.

X-RAY AND OTHER ELECTRO-MEDICAL EQUIPMENT ADVISORY BOARD.

Year 1937-1938.

This Board was constituted by Executive Minute on 1st May, 1935, published in the *Government Gazette* of 4th May, 1935, and has met consistently throughout the financial year under review.

Membership is as follows:—

Sir Raphael Cilento, Kt., M.D., B.S., D.T.M. & H., Director-General of Health and Medical Services; and Professor of Social and Tropical Medicine in the University of Queensland, Brisbane; (Chairman);

Valentine McDowall, M.B., Ch.M., Senior Radiologist and Senior Radium Therapeutist, Brisbane and South Coast Hospitals Board;

Arthur Boyd, B.E., D.S.C., M.I.E.E., Assoc.M.Inst.C.E., Lecturer in Mechanical and Electrical Engineering, University of Queensland, Brisbane;

George William Watson, M.V.O., Under Secretary, Chief Secretary's Department, Brisbane.

The functions and duties of the Board are defined in the Schedule attached to the Executive Minute appointing the Board.

In accordance with paragraph (3) of the Schedule, it is the duty of the Board to furnish an annual report to the Minister for Health and Home Affairs upon the work and activities of the Board. The following is submitted accordingly:—

X-Ray Plants.

During the financial year under review tenders were called at the request of this Board by the State Stores Board for a number of X-ray plants from time to time. After consideration of the tenders in each instance, the State Stores Board was requested to purchase, and the successful tenderer to instal X-ray plants at the hospitals in the following cities and towns:—

Bundaberg, 2nd August, 1937 (order placed during preceding financial year).
Cairns, 26th November, 1937.
Monto, 22nd November, 1937.
Rockhampton, 30th December, 1937.
Brisbane, 5th January, 1938 (additional mobile plant).
Wondai, 15th January, 1938 (installation approved but delayed at request of hospital authorities).
Mount Morgan, 27th January, 1938.
Mount Isa, 3rd March, 1938.
Richmond, 9th April, 1938.
Ipswich, 20th September, 1937 (The contract in so far as the table—which represented portion of the tender—was concerned, was the subject of dispute in respect of capacity. By mutual agreement, as some ambiguity in this regard may have existed, the provision of the table was made the subject of a further contract, action upon which will be finalised at an early date).

At the end of the financial year there remained several applications for X-ray and other electro-medical equipment, consideration of which or action upon which had not been finalised. These included requests from Gordonvale; Taroom (where the installation of electric light facilities as a preliminary to the provision of an X-ray plant *inter alia* is under discussion); Maryborough, and Mareeba (in respect of each of which the closing date for tenders falls in the financial year 1938-39).

To avoid inconvenience, emergency requests for X-ray tubes or other essential provision were approved by the Chairman, and subsequently endorsed by the Board. Such replacements were made in connection with the general hospitals at Townsville and Thursday Island.

During the year accessory equipment was approved and supplied to hospitals at Brisbane, Gayndah, and Bowen.

DEEP THERAPY PLANT.

Approval was also given for the provision of a deep therapy plant to the Brisbane Hospital, and tenders were called throughout Australia, and (by arrangement with the Agent-General for Queensland and the High Commissioner for the Commonwealth), in England and America. As the date for the return of these tenders is subsequent to the close of the financial year, the matter awaits finalisation.

SPECIFICATIONS FOR PLANTS AND PLANS FOR X-RAY ROOMS.

The Board has from time to time amended its specifications as experience has demonstrated any necessity. It has been a matter of difficulty to arrive at a specification which should be general enough to include all plants and, at the same time, sufficiently specialised to meet the particular necessities of individual hospitals. Some tenderers have claimed that the specification is not sufficiently exact; others have objected that the specification is so detailed that it tends to exclude all but particular plants. The Board has attempted throughout to meet both sets of objections, and has left to individual tenderers the opportunity of elaborating any particular advantages claimed for their plants in letters accompanying their tenders.

During the present year, the question of railway freight which had been an item on the tender list was deleted and the following paragraph has now been inserted in the specification to meet this situation:—

> "Tender price must not include any amount for rail freight in Queensland. The successful tenderer will be issued with a rail requisition authorising the Railway Department to charge amount of rail freight to the Government Department or hospital concerned.
>
> "Tenderers must state the town in Queensland from which the consignment will be railed."

A further alteration was made in respect of interest due on final payments. The present arrangement made by the Board is that an amount equal to 75 per cent. of the contract price is payable immediately upon satisfactory installation of the plant and training of the local operator, as evidenced by the provision by him to the Board of a set series of satisfactory skiagrams taken with the plant in question subject to the conditions set by the Board. A second set of skiagrams is forwarded after the plant has been in operation for three months, and the remainder of the contract price plus interest for three months is then paid to the successful tenderer. In rare instances, however, there has been delay in finalisation of the second payment owing to the failure to supply a second set of skiagrams, either through instrumental defects or because of delay on the part of the hospital concerned. Accordingly, the following alterations and additions have been made to the specification in respect of skiagrams:—

> "A similar set of skiagrams is to be produced at   by the hospital nominee under the supervision of the Installation Engineer as soon as possible after installation.
>
> "If the results are considered satisfactory by the Advisory Board 75 per cent. of the contract price will be paid to the contractor within thirty days from date of installation.
>
> "A similar set of skiagrams is to be taken by the hospital nominee after the lapse of three months from the date upon which the first set of skiagrams was passed as satisfactory by the Advisory Board.
>
> "If the results are considered satisfactory by the Board, the remainder of the sum due for payment will be handed over to the contractor as early as convenient and the contractor shall be paid interest at the rate of 5 per cent. per annum on this latter sum for a period extending from the date of the first payment until the date of final payment.
>
> "If the results are considered unsatisfactory by the Board because of failure or defect in any apparatus, tuition, or other responsibility of the contractor, the contractor shall be paid interest at the rate of 5 per cent. per annum on this latter sum specified above for a period not exceeding three months from the date of the first payment.
>
> "In the event of a dispute as to the interpretation of the terms of this clause, the matter shall be referred to the X-ray and other Electro-Medical Equipment Advisory Board, whose decision shall be final."

Last financial year, the Board, impressed with the desirability of standard specifications for X-ray rooms, published minimum provision in the form of standard plans (A) and (B). During the current year, there has been some demand for these specifications which are available to hospitals or hospital architects on application. The hospital authorities at Boonah, Nambour, and Blackall forwarded plans for the construction of new hospitals, with the request that the X-ray space provided should be scrutinised from the point of view of capacity, suitability, and location. The Board very willingly furnished the advice requested.

Diathermy Plants.

The matter of the provision of diathermy plants, and more recently of the short wave type of plant, is one that has given the Board continued concern. Medical practice is as much subject to fashions as any other public utility and for some time all interested parties, particularly lay boards, have been subjected to high-pressure salesmanship in respect of proprietary drugs and electro-medical apparatus. Though it is recognised that there is a definite field for diathermy, the indiscriminate provision of apparatus for this purpose cannot be approved. The subject is very largely in the experimental stage and whatever may be the results obtained by the expert—a matter of considerable controversy—diathermy in hospital practice—especially country hospital practice—has a very limited justifiable application except under the supervision of an expert. Instances have been brought to the notice of the Board where well-intentioned but haphazard treatment by diathermy, followed by apparent improvement, has materially handicapped the subsequent progress of the case and has often involved actual damage.

In some places where diathermy apparatus has been made available at relatively high cost it has been used only for trivial purposes which could have been met, if necessary at all, by an external radiator of the infra red type. In other cases, the application has merely been based upon the spectacular representations and pictures of sales catalogues, and the neon rods that demonstrate induction fields. The layman, impressed by the electrification of a neon rod, is inclined to believe that its incandescence indicates potent medicinal capacity rather than a mere demonstration of a very simple phenomenon in electro physics.

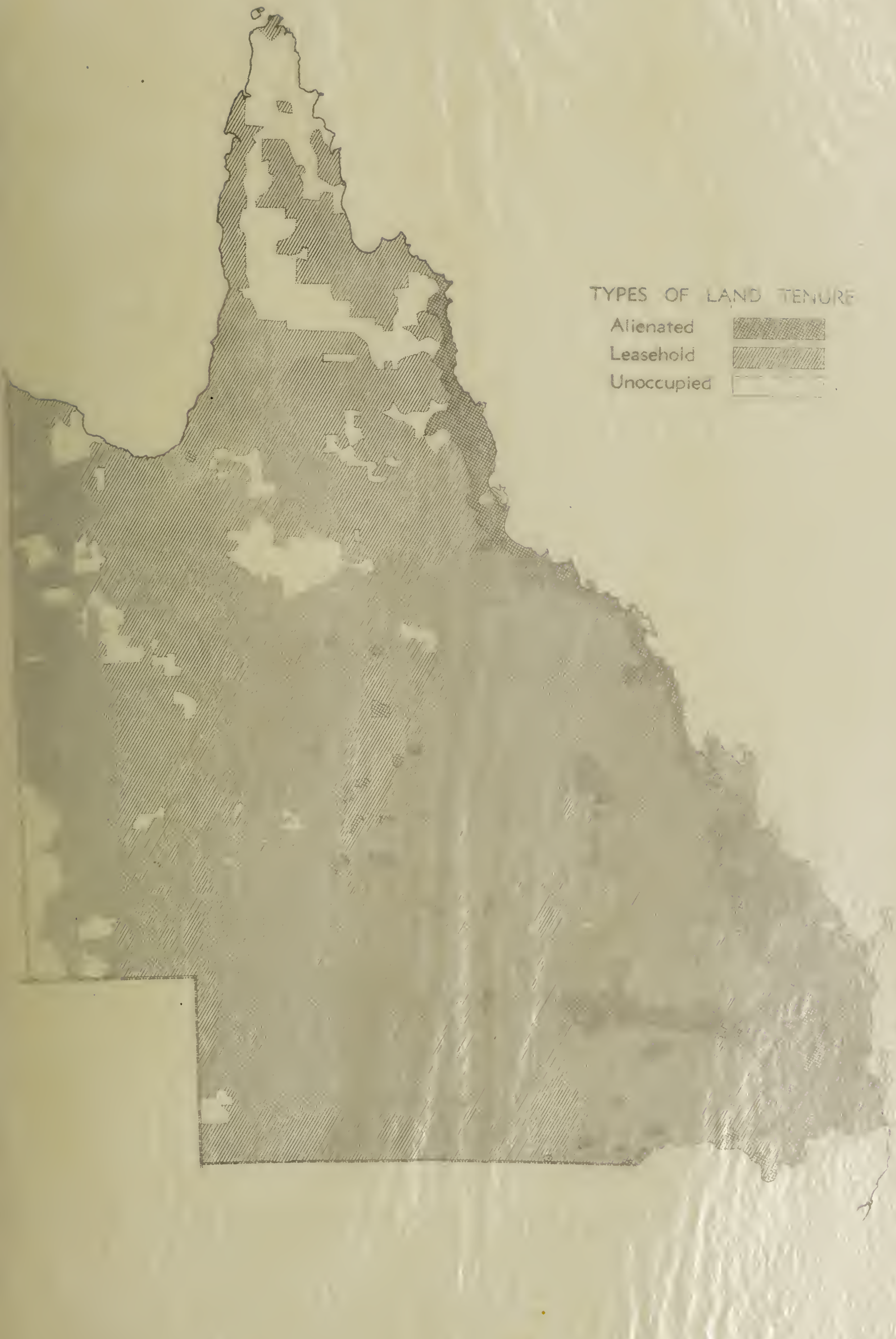
Surgical diathermy is directly discouraged by the Board, and there is nothing within the range of medical diathermy justifiable in small hospitals that cannot adequately be dealt with by the cheaper forms of apparatus, if the operator has intelligence enough to handle diathermy apparatus at all. The Board's decisions against the provision of expensive apparatus in localities where it was considered that it was not justified were questioned on several occasions. On reference to the Minister towards the close of the financial year, however, it was ruled that, except where new and important facts, not previously considered by the Board, were brought forward, the Board's express decision was to be final in all such cases.

The Board has, after very careful deliberation, felt that it must set its face against providing with Government authority apparatus where there is a definite disparity between utility and expense.

Distribution of X-ray Plants.

The attached line map of Queensland indicates the distribution of X-ray plants in hospitals as at this date. An attempt has been made by the Board to determine the location of all existing X-ray plants, both public and private, but the information in respect of private plants has not been found to be available. It will be observed that there are now few material aggregations of population which are not within reasonable reach of some public X-ray plant, and in those few areas where this does not appear to be the case, private plants occasionally supply the necessities of the situation. This, of course, is reinforced further by the increased availability of aeroplane transport, which has made it possible for many persons in remote localities to be brought speedily and with a minimum of disturbance to places in which the most up-to-date radiological service is available.

R. W. CILENTO (Chairman).
V. McDOWALL.
A. BOYD.
G. W. WATSON.


TYPES OF LAND TENURE
Alienated
Leasehold
Unoccupied

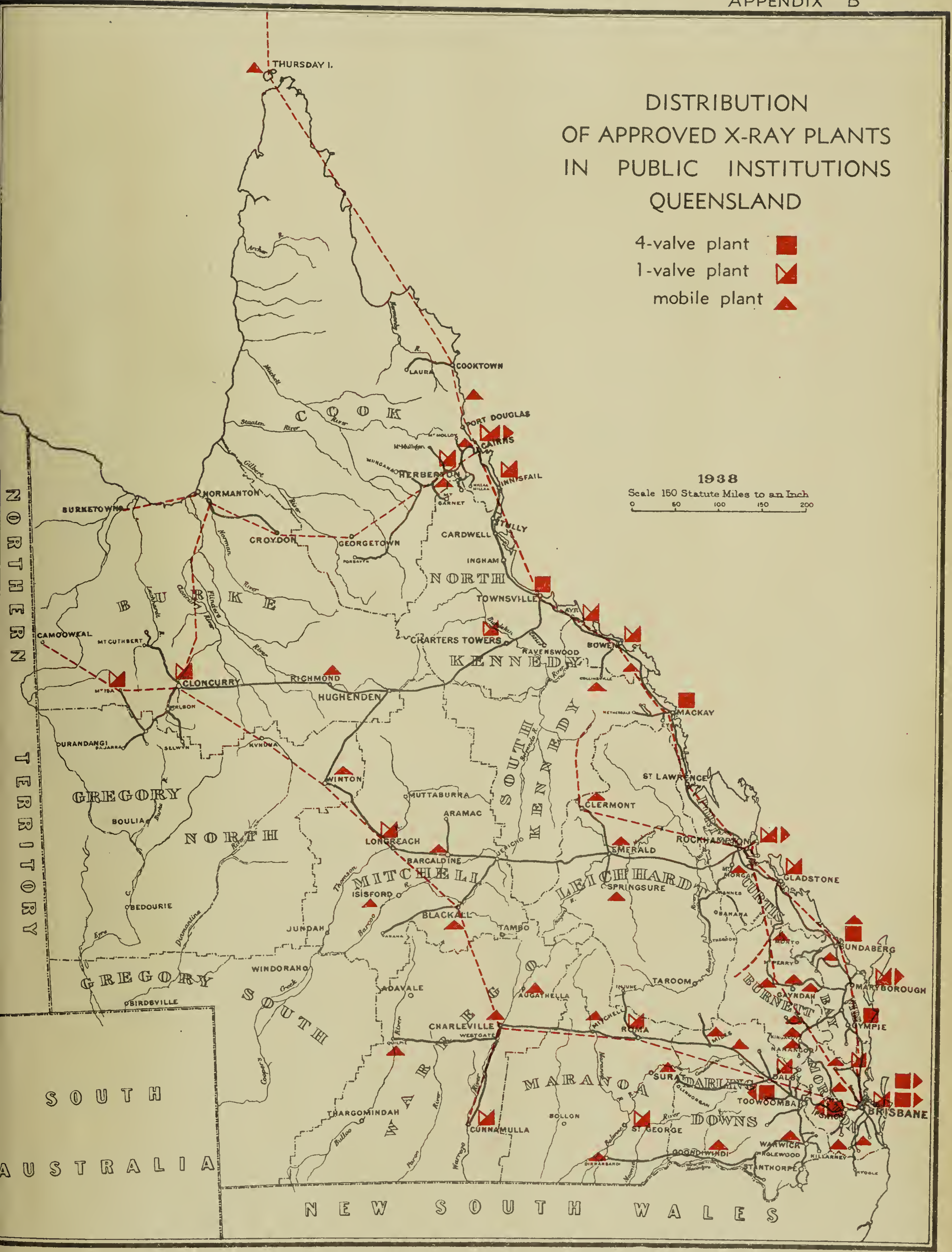


FIGURE VI.—X-ray Plants in relation to Railways, Air Routes, and Population as indicated by Land Tenure.

Appendix C.

DEPARTMENT OF HEALTH AND HOME AFFAIRS.

HOOKWORM CAMPAIGN.

ANNUAL REPORT, 1938.

GENERAL.

The staff working under Field Hookworm control at the beginning of July, 1937, comprised a microscopist and two residential nurses at Cairns, one residential nurse at Innisfail, and one residential nurse at Ingham. One sanitary inspector was attached to the campaign and was stationed in the Cairns area.

During May, 1938, Nurse Bowder was transferred from Cairns to Tully to open up the centre for hookworm and general school medical work.

The present disposition of officers is as follows:—Cairns, S. Thompson, microscopist, Nurse M. Thomsen, and J. Williamson, sanitary inspector; Innisfail, Nurse E. D. Brennan; Tully, Nurse K. Bowder; Ingham, Nurse A. S. Webb.

During the period under review, the Nurses carried out general school work (medical) together with hookworm school survey, all specimens being forwarded to Cairns for examination by the microscopist.

The figures for hookworm and sanitation work carried out by these officers is shown in the attached tables.

Of the 719 positive hookworm hosts found in all areas, 529 have been treated to a cure. Only 56 school-going children remain uncured and they are receiving treatment periodically.

It was necessary for the nurses to remove to hospital for treatment several hookworm hosts who were not taking the treatment at their homes, and a number of children who were under three years of age.

The inspector attached to the Cairns centre carried out house to house intensive survey in the Parramatta, Woree, and Edmonton sub-areas. Altogether 1,235 persons were examined and 34 were found to be infested with hookworms.

The sanitation in these sub-areas is up to a fair standard, and with the co-operation of the shire inspector it is watched carefully.

Of the 7,256 specimens examined during the year under review, 719 showed positive results and only a few were heavily infested. Also, 367 specimens contained ova of other parasitic worms, namely—*Oxyuris vermicularis, Trichuris trichiura, Ascaris lumbricoides, Hymenolepis nana, Trichostrongylus orientalis, Tænia solium,* and *Tænia saginata.* Only a few of the last three were found.

The microscopist forwarded to Brisbane specimens of fæces containing ova of the different parasitic worms found, for use in connection with the training of medical students.

As mentioned in my previous annual report, several doses of hookworm treatment had to be given the hosts who were harbouring the *Ancylostoma* type of hookworm before affecting a cure.

During the year, mass treatment work was carried out by Nurse Thomsen with the assistance of the microscopist, at the homes of white child "positives," and of camps of aborigines at Skeleton Creek, Hambledon, Woree, and Sand Pit in the Cairns area. This is the best method of treating hookworm disease to a cure.

In March of this year, the microscopist visited the islands in Torres Strait and carried out hookworm mass treatment and inspection work among the aborigines. The figures are in the attached table.

From all areas, 32 positive specimens were cultured, and 22 showed free living hookworm larvæ of the *Ancylostoma* type.

From the Cairns and Innisfail areas, 118 previous hosts were re-examined after being cured six months, and 7 showed positive hookworm. The homes of these have been advised to watch soil pollution.

During the last few months, the inspectors who are attached to the Anti-leptospiral Campaign have assisted the resident nurses in the Innisfail and Ingham areas with the collection of re-examination and "delinquent" specimens.

The medical practitioners and school teachers in the hookworm belt have given all possible assistance to the hookworm campaign in helping to eradicate hookworm disease.

Attached hereto please find tables giving figures of each area with headings to indicate the nature of the work done.

Returns of sanitation and other works carried out by the inspector in the Cairns area are attached.

S. THOMPSON,
Microscopist in Charge.

The Director-General of Health and Medical Services,
Brisbane.

HOOKWORM CAMPAIGN.

ENDEMIC AREA UNDER RESIDENTIAL CONTROL.

Name.	Census.	Specimens.					Treatments.				
		Received.	Exam'd.	Re-exam'd.	Positive.		Notices.	Delivered	Posted.	Earth Closets.	Cured.
					H. W.	Others.					
Cairns Area—											
Schools	785	823	740	83	54	48	49	25	18	32	52
Mossman Area—											
Schools	297	311	291	20	32	11	11	. .	32	10	10
Atherton Area—											
Schools	. .	34	. .	34	7	. .	. .	. .	7	7	27
Innisfail Area—											
Schools	1,270	1,352	1,263	89	60	84	74	22	23	30	63
Tully Area—											
Schools	149	130	121	9	3	1	1	. .	3	. .	9
Ingham Area—											
Schools	941	1,124	1,034	90	103	85	65	96	5	56	42
School Total	3,442	3,774	3,449	325	259	229	200	143	88	135	203
Intensive Survey—											
Cairns Area—											
Parramatta Sub-area	5	30	30	. .	. .	. .	. .	. .	. .	. .	. .
Woree Sub-area. .	137	146	146	. .	6	6	6	6	. .	. .	. .
Edmonton Sub-area	1,188	1,059	1,059	. .	28	23	23	28	. .	9	. .
Innisfail Area—											
Mourilyan Sub-area	77	79	79	. .	1	2	5	8	. .	1	. .
Intensive Survey Total	1,407	1,314	1,314	. .	35	31	34	42	. .	10	. .
Other Hosts in—											
Cairns Area . .	. .	139	. .	139	44	3	3	31	9	44	95
Mossman Area . .	. .	52	. .	52	28	. .	. .	. .	20	28	24
Innisfail Area . .	. .	192	. .	192	83	3	3	17	19	83	109
Tully Area	. .	18	. .	18	9	. .	. .	1	2	9	9
Ingham Area . .	. .	91	. .	91	59	1	. .	59	3	59	32
Other Hosts Total . .	. .	492	. .	492	223	7	6	108	53	223	269
Aborigines—											
Cairns Area . .	109	125	93	32	58	12	12	69	. .	42	18
Mossman Area . .	9	11	9	2	5	1	1	1	4	5	2
Atherton Area . .	. .	4	. .	4	. .	. .	. .	. .	. .	. .	4
Innisfail Area . .	22	98	38	60	36	4	3	27	. .	36	33
Tully Area	4	5	4	1	3	3	2	. .	. .	3	. .
Ingham Area . .	7	7	7	. .	3	. .	. .	2	1	3	. .
Aborigines Total . .	151	250	151	99	105	20	18	99	5	89	57
Miscellaneous—											
Cairns	376	361	361	. .	19	42	42	15	4	19	. .
Mossman Area . .	213	198	198	. .	27	4	4	1	11	27	. .
Innisfail Area . .	613	539	539	. .	23	17	18	19	14	22	. .
Tully Area	103	103	103	. .	3	4	4	. .	3	3	. .
Ingham Area . .	312	225	225	. .	25	13	13	21	. .	25	. .
Miscellaneous Total . .	1,617	1,426	1,426	. .	97	80	81	56	32	96	. .
All Areas—											
Cairns Area . .	2,600	2,683	2,429	254	209	134	135	174	31	146	165
Mossman Area . .	519	572	498	74	92	16	16	2	67	70	36
Atherton Area . .	. .	38	. .	38	7	. .	. .	. .	7	7	31
Innisfail Area . .	1,982	2,260	1,919	341	203	110	103	93	56	172	205
Tully Area	256	256	228	28	18	8	7	1	8	15	18
Ingham Area . .	1,260	1,447	1,266	181	190	99	78	178	9	143	74
Grand Total . .	6,617	7,256	6,340	916	719	367	339	448	178	553	529

HOOKWORM CULTURES.

Areas.	Examined.	Anchylostoma	Necator.	Mixed.
Cairns Area	7	4	. .	3
Mossman Area	7	. .	5	. .
Innisfail Area	8	8	. .	. .
Ingham Area	10	10	. .	. .
Totals	32	22	5	3

SCHOOL-GOING CHILDREN.

Re-examinations after being Cured Six Months.

Areas.	Re-examined.	Reinfested H.W.	Others.	Still Cured.
Cairns Area	92	2	1	90
Innisfail Area	26	5	..	21
Totals	118	7	1	111

Aborigines Mass-treated, Torres Strait Islands.

Name.	Men.	Women.	School Children.	Pre-school Children.	Total.
Badu Island	32	50	151	9	242
Murray Island	29	31	102	7	169
Darnley Island	28	38	93	7	166
Stephen Island	5	13	20	4	42
Yorke Island	23	30	38	8	99
Coconut Island..	18	21	40	6	85
Yam Island	21	29	68	11	129
Cowal Creek	44	37	52	6	139
Totals	200	249	564	58	1,071

ADDENDUM TO HOOKWORM REPORT.

Sanitation.

Cairns Shire (Woree-Edmonton-Gordonvale Sub-areas).

——	Woree Sub-area.	Edmonton Sub-area.	Gordonvale Sub-area.	Total.
Number of places visited	13	357	34	404
Number of sanitary conveniences inspected	13	374	40	427
No action required	4	139	28	171
Number of defective cabinets	9	235	12	256
Reinspections	*9	*229	*12	*250
Action taken	2	66	1	69
Action partially taken	..	95	4	99
Number of places without sanitary conveniences	..	16	..	16
Number of septic tanks	1	18	4	23
No action taken	7	78	7	92

* These figures refer to the number of cabinets reinspected, not the number of reinspections made.

Classification of Cabinets.

D Class	Regulation cabinet
G Class	Below standard, but not allowing soil pollution.
E Class	Allowing soil pollution.
F Class	No sanitary convenience.

After first inspection—

D Class.	G Class.	E Class.	F Class.
133	170	60	16

After reinspection—

D Class.	G Class.	E Class.	F Class.
215	186	20	6

ANNUAL REPORT

OF THE

ACTING DIRECTOR OF INFANT WELFARE

T. HENRY R. MATHEWSON, M.B., Ch.B., (Edin).

TO

30th JUNE, 1938.

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Annual Report of the Acting Director of Infant Welfare for the Year 1937-38.

A RETROSPECT.

Dr. A. Jefferis Turner, who had been Director of Infant Welfare since 1926 (and who succeeded Miss Chatfield, who had acted as Supervisor), resigned on 31st December, 1937. Miss Barron, who was appointed Superintendent in 1924, began her extended leave on 1st October, 1937.

The people of Queensland have been fortunate in having the services of such able people to lay the foundations of our baby clinic work, the success of which remains a monument to their organising ability, their breadth of vision, their enthusiasm and industry. They have been ably supported by a band of nurses, most of whom have been trained in our own training school and who have carried with them into their work a keen and intelligent interest in preserving and improving the health of our mothers and children. As a result of the work of the baby clinics, a widespread public interest in the welfare of infants and young children has been created. There exists now a much higher standard of knowledge among mothers and nurses of the problems affecting the health of our children. Breast-feeding has become more generally adopted, so that it is rather the exception to find babies who are not wholly or partly breast-fed.

When Dr. Turner was appointed Director, there were 4 metropolitan baby clinic centres, 1 sub-centre at Wynnum, centres at Ipswich, Toowoomba, Gympie, Maryborough, Bundaberg, Rockhampton, Mackay, Townsville, and Cairns. To-day there are 26 centres and 78 sub-centres scattered over the State. The total attendances at the clinics for the year ending 30th June, 1927, were 14,951; for the present year ending 30th June, they amounted to 213,463. For the year ending 30th June, 1927, 25 nurses were on our staff; to-day there are 49.

BIRTH-RATE.

The total births for 1937 show an increase of 407 over the figures for 1936; and the birth-rate for Queensland is 19·36 as compared with 19·17 for 1936.

TABLE I.

CRUDE BIRTH RATES FOR THE VARIOUS STATES OF THE COMMONWEALTH OF AUSTRALIA AND FOR THE DOMINION OF NEW ZEALAND, PER 1,000 OF THE POPULATION.

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	West Australia.	Tasmania.	New Zealand.
1933	16·99	15·60	18·14	15·32	17·95	19·93	16·59
1934	16·52	15·20	18·17	14·50	17·66	19·51	16·47
1935	16·89	15·16	18·31	14·14	18·23	19·41	16·13
1936	17·31	15·63	19·17	15·17	18·84	19·84	16·64
1937	17·63	16·02	19·36	15·25	18·95	20·69	17·29

INFANTILE MORTALITY.

The baby clinics were opened in Brisbane towards the end of 1917. The infantile mortality rate for Brisbane (*i.e.*, the number of children under one year of age who died per 1,000 children born) for the year 1919 was 94·6; for the year 1937 it was 40·08. The infantile death-rate for Queensland on the same basis for the year 1919 was 72·4; for the year 1937 it was 35·6, which is the lowest on record for the State and is the second lowest in the Commonwealth. South Australia has a rate of 33·06, and the Dominion of New Zealand a rate of 31·21. For the year 1936 the infantile mortality rate of Queensland was 36·2; of South Australia 31·1; of New Zealand 31·0.

While the mortality rate amongst infants during the first month of life has remained fairly constant in most of the other States of the Commonwealth and New Zealand, it has shown a gradual fall in South Australia and Queensland. For 1937, in Queensland, there has been a decrease of 41 deaths in the first month of life. Conditions showing a decrease compared with 1936 (see Table II.) were as follows:—

Convulsions	6
Broncho-pneumonia and pneumonia	6
Debility	7
Injury at birth	12
Atelectasis	11
Sclerema	9
Icterus neonatorum	3

On the other hand, deaths during the first month due to "prematurity," increased by 10, making the deaths from this cause 238 out of a total of 452—viz., 52·6 per cent.—a very high proportion. In to the causes of prematurity I am making an investigation, the result of which I expect to record at a later date.

The various causes predisposing to premature births are doubtless responsible in many cases for still-births, and perhaps for maternal mortality and morbidity. Until the number of still-births is known, we cannot estimate our true infantile mortality rate. As pointed out by Dr. Eardley Holland in the introduction to his comprehensive report to the Ministry of Health on the causation of fœtal death some years ago, the subject of fœtal death has attracted little attention either from obstetricians or pathologists. He makes the suggestion that the apparent neglect is due to the fact that the problems of the dead who have lived are more arresting than those of the dead who have "never lived." In a series of 300 cases representative of different districts and of different types of hospital practice in England he found that the chief causes of fœtal death were—

- Injury at birth.
- Syphilis.
- Albuminuria of pregnancy (including chronic nephritis).
- Eclampsia.
- Accidental hæmorrhage.
- Placenta prævia.
- Contracted pelvis.
- Breech presentation.
- Transverse presentation.
- Excessive cranial stress in prolonged and in normal labour.
- Prolapse of the cord.
- Abnormalities of and hæmorrhage into or behind the placenta.
- Malformation of the fœtus.

(These are not placed in their order of frequency, nor are the primary and secondary causes separated.)

It is probable that, in Queensland, all these causes play a part in producing fœtal deaths.

TABLE II.

Births, Deaths, and Causes—Infants under One Month, Neonatal Mortality—in Queensland.

Year.	Number of Births.	Number of Deaths.	Rate per 1,000 Births.	Causes.								
				Convulsions.	Broncho-pneumonia & Pneumonia.	Debility.	Malformations.	Prematurity.	Injury at Birth.	Atelectasis.	Icterus Neonatorum.	Sclerema.
1936	18,755	493	26·3	9	14	26	58	228	66	43	11	18
1937	19,162	452	23·6	3	8	19	62	238	54	32	8	9

TABLE III.

Neonatal Mortality Rate for States of Commonwealth and Capital Cities, and New Zealand.

States of Commonwealth and New Zealand.	Deaths under One Month per 1,000 Births.					Capital Cities of Commonwealth.	Deaths under One Month per 1,000 Births.				
	1933.	1934.	1935.	1936.	1937.		1933.	1934.	1935.	1936.	1937.
New South Wales ..	27·47	28·94	27·76	29·51	..	Sydney	25·29	27·69	25·79	28·55	..
Victoria	27·65	27·78	27·61	26·56	..	Melbourne	26·53	29·26	27·39	25·92	..
Queensland	28·62	28·80	27·19	26·34	23·6	Brisbane	31·15	30·39	32·42	27·56	..
South Australia ..	22·25	22·46	23·70	20·99	23·7	Adelaide	23·10	28·28	24·82	20·02	..
West Australia ..	23·11	26·15	25·50	25·47	..	Perth	21·16	25·17	23·91	26·35	..
Tasmania	27·67	27·07	35·91	34·27	..	Hobart	34·00	27·00	Not	availa	ble
New Zealand ..	22·81	22·86	22·03	22·31	22·22	Wellington		Not	availa	ble	

While there has been a decrease of deaths during the first month of life, there has been an increase of 45 deaths during the succeeding eleven months. The chief causes of this increase compared with 1936 are as follows:—

Whooping cough	14
Diarrhœa	13
Malformations	6
Accidents	6

It will be observed that the increase is due mainly to diarrhœa, from which deaths have occurred in various parts of the State, and to whooping cough. The increase in the number of deaths from accidents was due to burns (2), suffocation (2), and choking (2).

By referring to Table IV. it will be noticed that the mortality from broncho-pneumonia and pneumonia is high, accounting for nearly one-third of the deaths in 1936 and one-quarter in 1937 in the age group one month and under one year. In young children broncho-pneumonia is frequently a complication of whooping cough as well as other epidemic diseases, such as influenza and measles. This emphasises the importance of not exposing young children to these infections unnecessarily.

TABLE IV.

BIRTHS, DEATHS, AND CAUSES OF DEATHS OF INFANTS ONE MONTH AND UNDER ONE YEAR, IN QUEENSLAND.

Year.	Number of Births.	Number of Deaths.	Rate per 1,000.	Malformations.	Diarrhœa.	Bronchitis.	Broncho-pneumonia and Pneumonia.	Whooping Cough.	Measles.	Diphtheria.	Influenza.	Accidents.	Syphilis.	Meningitis.	Cerebral Hæmorrhage.	Prematurity.
1936	18,755	186	9·9	25	25	7	54	7	1	5	4	5	0	4	0	4
1937	19,162	231	12·1	31	38	5	53	21	1	1	8	11	3	3	3	8

In examining a chart showing the infantile mortality rate over a number of years, it will be noticed that there are fluctuations indicated by the rise and fall of the graph. The main reason for this is that infantile mortality is in part an epidemic mortality. Until ten years ago diseases of the digestive system, which include the diarrhœas, were responsible for greatly increasing the infantile mortality. Upsets of this system form a very important part of the work of the clinics. The proportion of deaths under one year due to diarrhœa has gradually fallen in Queensland from 30 per cent. of the total deaths during the first year in 1919 to 6·3 per cent. in 1937; in Brisbane the proportion has fallen from 41·6 per cent. to 4 per cent. (See Table V. and chart at back.)

TABLE V.

INFANTILE MORTALITY RATE—DEATHS OF INFANTS UNDER ONE YEAR PER 1,000 BORN, FOR THE STATES OF THE COMMONWEALTH OF AUSTRALIA AND FOR THE DOMINION OF NEW ZEALAND.

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	West Australia.	Tasmania.	New Zealand.
1933	39·3	40·4	42·6	32·1	36·8	41·1	31·6
1934	46·6	44·6	40·6	35·6	40·9	42·3	31·7
1935	39·4	41·2	37·3	35·0	40·2	51·8	32·2
1936	43·5	42·3	36·2	31·1	42·2	49·6	31·0
1937	40·6	36·7	35·6	33·0	37·5	41·7	31·2

At the age of one to two years, broncho-pneumonia, pneumonia, and diarrhœa still rank high as causes of mortality. The same care in regard to exposure to infection is necessary at this age as well as care in regard to feeding.

TABLE VI.

CAUSES OF DEATHS OF CHILDREN—ONE TO TWO YEARS IN QUEENSLAND.

Year.	Poliomyelitis.	Measles.	Scarlet Fever.	Whooping Cough.	Diphtheria.	Influenza.	Meningitis.	Bronchitis.	Broncho-pneumonia.	Pneumonia.	Diarrhœa.	Appendicitis.	Malformations.	Accidents.	Nephritis Ac.	Nephritis Chr.	Snakebite.	Osteomyelitis.	Other Causes.	Total.	Population, 1–2 Years.	Rate per 1,000 Living.
1936	..	5	4	5	4	5	3	..	18	12	23	1	5	9	..	1	..	1	22	118	16,800	7·0
1937	..	2	1	3	8	1	..	2	15	17	15	1	6	13	..	..	..	..	22	106	17,500	6·1

At ages two to five years, diphtheria easily heads the list of causes of mortality, the deaths occurring chiefly between the ages of three and four years. The value of immunisation in order to protect children at these ages cannot be stressed too strongly.

TABLE VII.

CAUSES OF DEATHS—AGES TWO TO FIVE YEARS—IN QUEENSLAND.

Year.	Poliomyelitis.	Measles.	Scarlet Fever.	Whooping Cough.	Diphtheria.	Influenza.	Diabetes Mellitus.	Meningitis.	Bronchitis.	Broncho-pneumonia.	Pneumonia.	Diarrhœa.	Appendicitis.	Nephritis Ac.	Nephritis Chr.	Accidents.	Snakebite.	Osteomyelitis.	Other Causes.	Total.	Population, 2–5 Years.	Rate per 1,000 Living.
1936	1	1	2	1	28	3	1	2	..	8	6	8	5	3	..	13	2	1	23	108	49,400	2·2
1937	..	1	1	4	21	8	..	5	4	14	6	7	3	3	1	12	..	1	35	126	49,400	2·6

PUERPERAL AND MATERNAL MORTALITY.

On referring to Table IX. it will be observed that there has been a slight reduction this year in our puerperal mortality rate, which includes deaths from abortion, the accidents of pregnancy and the deaths from childbirth. There has been a slight increase in our maternal mortality rate, which is calculated from the number of deaths from childbirth per 1,000 births. The increase has been due to the toxæmias of pregnancy, hæmorrhage, and septicæmia, and is shown in Table X.

TABLE VIII.

PUERPERAL AND MATERNAL MORTALITY IN QUEENSLAND.

—	1934.	1935.	1936.	1937.
Deaths from abortion	28	18	31	23
Deaths from accidents of pregnancy	5	11	11	4
Deaths from childbirth	47	44	49	59

TABLE IX.

PUERPERAL AND MATERNITY MORTALITY RATES IN QUEENSLAND.

Year.	Number of Births.	Puerperal Deaths.	Per 1,000 Live Births.	Deaths from Childbirth.	Per 1,000 Live Births.
1934	17,360	80	4·61	47	2·70
1935	17,688	73	4·13	44	2·49
1936	18,755	91	4·85	49	2·61
1937	19,162	86	4·49	59	3·08

TABLE X.

CHIEF CAUSES OF DEATHS DUE TO CHILDBIRTH IN QUEENSLAND.

Causes.	1936.	Percentage.	1937.	Percentage.
Puerperal albuminuria, eclampsia, and other toxæmias of pregnancy	17	34·7	21	35·6
Puerperal hæmorrhage	7	14·3	15	25·4
Puerperal septicæmia	14	28·6	10	16·9

In Table XI. are shown the puerperal and maternal mortality rates for each of the States and for the Commonwealth, including the Northern Territory and the Federal Capital Territory, for 1936, which are the latest figures available. Reference to this table shows that Queensland has the lowest puerperal mortality rate, as well as the lowest maternal mortality rate.

TABLE XI.

PUERPERAL AND MATERNAL MORTALITY RATES FOR EACH OF THE STATES OF THE COMMONWEALTH, AND FOR THE COMMONWEALTH, INCLUDING NORTHERN TERRITORY AND FEDERAL CAPITAL TERRITORY, FOR 1936.

State.	Number of Births.	Puerperal Deaths.	Rate per 1,000 Live Births.	Deaths from Child-birth.	Rate per 1,000 Live Births.	Deaths from Abortion.	Rate per 1,000 Live Births.	Deaths from Accidents of Pregnancy.	Rate per 1,000 Live Births.
New South Wales.. ..	46,193	292	6·32	174	3·77	99	2·14	19	·41
Victoria	28,883	181	6·27	107	3·70	58	2·01	16	·55
Queensland	18,755	91	4·85	49	2·61	31	1·65	11	·59
South Australia	8,911	53	5·95	28	3·14	20	2·24	5	·56
West Australia	8,479	43	5·07	24	2·83	18	2·12	1	·12
Tasmania	4,581	35	7·64	28	6·11	6	1·31	1	·22
Commonwealth, Northern Territory, and Federal Capital Territory ..	116,073	696	6·00	410	3·53	233	2·01	53	·46

The apparent failure of the maternal death-rate to yield to our efforts to reduce it should spur us on to fresh activity. In our attempt to lower it there must be the co-operation of all those concerned—the patient herself, her husband, the doctor, and the nurse. There should be the happy, healthy home surroundings, as well as efficient antenatal care. It has been said that antenatal treatment consists chiefly in the treatment of syphilis and other infections and of the toxæmias of pregnancy. The value of a well-balanced diet is now well established. The opinion has been expressed that too many patients are sent to hospital late instead of being sent when the first signs of danger arise. Though antenatal work is of immense importance, the proper management of childbirth itself is equally important. The necessity for the efficient training of medical students in this branch of their work requires to be emphasised.

INFANTS IN RESIDENCE.

During the year we have received into residence a number of premature and other delicate babies, including triplets, who have made very satisfactory progress. At present we are handicapped in regard to this part of our work, because we are able to receive infants into residence only during the active terms, which extend over a total period of eight months of each year. On this account, we have been compelled to refuse admission to infants who were in need of skilled and experienced child welfare nursing. When our mothercraft home is established, this part of our work will be carried on without interruption, and greater facilities will be provided also for the training of our pupil nurses. We shall be able also to provide refresher courses for our senior nurses, many of whom have been away from the metropolis for a number of years and are out of touch with recent developments in child welfare work. The mothercraft home will provide increased opportunities and facilities for training a larger number of nurses in child welfare work, and consequently will hasten the attainment of the ideal of a welfare-trained nurse in every maternity hospital in the State. It will become a centre at which talks and demonstrations to mothers and school children will be given, as well as lectures and demonstrations to medical students and post-graduate teaching to medical practitioners.

ASPECTS OF CHILD WELFARE WORK REQUIRING SPECIAL NOTICE.

Two aspects of child welfare work have received special attention recently both in Australia and abroad. One is the neonatal mortality, or deaths during the first month of life; the other is the care of the child of pre-school age.

NEONATAL MORTALITY.

Attention has been drawn in this report already to the gradual fall in the neo-mortality rates for Queensland and South Australia. While this gives us cause for satisfaction, there still occurs a heavy loss of life during this early period. Most of these infants are born unfit to live, the causes of their deaths being really antenatal. There is need for further concentrated effort directed to the understanding of these causes, many of which appear at present difficult to combat.

CHILD OF PRE-SCHOOL AGE.

In regard to the child of pre-school age, it is not sufficiently recognised that the object of the baby clinics is the prevention of disease, not only in children during the first year of life, but also in children up to school age, when the work of medical supervision is taken over by the School Health Services of this Department. Dr. St. Vincent Welch informs me that of 3,203 entrants to schools in Brisbane, 687 showed defects—i.e., 21·4 per cent. Disease of the tonsils and obstruction to breathing due to the presence of adenoids constitute the main defects. In the past a number of children have continued to attend the baby clinics for supervision until they reach school age. It is hoped to inaugurate a scheme for systematic examinaton of these chldren, the results of which, recorded on cards, will be passed on to the School Health Services Branch when the child enters school. By this means a complete record of each child's health from birth will be available.

BABY CLINIC AND CHILD WELFARE RAILWAY CAR.

The infant welfare railway car, which began its first itinerary in February, 1930, has continued to traverse the State railways annually. The attendances of school children at the health talks given by the nurses on the train are encouraging.

An annual visit is not of great service to the individual mother, but it has afforded many mothers an opportunity of coming into personal contact with our nurses and of learning something of child welfare work. Copies of the Queensland Mothers' Book have been distributed, and the mothers have been able to receive advice subsequently by correspondence. The opening of baby clinic centres in various parts of the State has diminished the usefulness of the railway car, and in consequence the number of mothers attending for advice has fallen off. On this account it is proposed to arrange more frequent itineraries to certain parts of the State where centres have not so far been opened.

CORRESPONDENCE.

Our nurses have frequently received letters from mothers unable to visit the clinics, asking for advice in regard to the care of their babies and young children. Advice by letter is an imperfect substitute for a visit to the clinics, but in some cases it is the only method available. This part of our work is extending, and is rapidly developing into a special department.

QUEENSLAND MOTHERS' BOOK.

The Queensland Mothers' Book has been carefully revised and a chapter on management of the child has been added. The new edition will shortly appear. The antenatal section, which will be included in the new book, will also be published separately for the use of our expectant mothers. We have reason to be gratified by the reception our Mothers' Book has received in the past, not only by those in our own State, but also those in other States.

ANTENATAL CLINICS.

The antenatal clinics were opened in February, 1929, under the direction of Dr. Beatrice Warner, who is still doing valuable work in connection with them. For the year ending 30th June, 1930, the attendances were 543; for the present year they totalled 2,301.

PUBLICITY WORK.

Monthly articles on some aspects of child welfare work have been supplied throughout the year to the Press. These articles have been given prominence in local newspapers and form an important medium by which is spread a scientific knowledge of mothercraft—by which we mean the science and art of correct mothering. The education of the people takes time and requires steady, patient, and persistent reiteration of facts.

CHILD WELFARE WORK OVERSEAS—A VISIT ABROAD.

During 1937 Miss D. Bardsley, one of the senior members of the staff, went abroad for the period of her extended leave, and arrangements were made for her to present letters from the Department of Health and Home Affairs and the Premier's Department to such child welfare organisations as she was able to visit in the time at her disposal. Miss Bardsley visited mothercraft homes, infant welfare centres, and infant and maternity hospitals in England, as well as some welfare centres and hospitals in the United States of America. She secured much useful information regarding child welfare work in these places, and she was pleased to report that the baby clinic work in Queensland is progressing on lines that compare very favourably with similar work overseas, although the differences in the size of the countries, in the population, in the climates, and in other respects make actual comparison difficult. Miss Bardsley records with appreciation the courtesy and helpful assistance that were everywhere extended to her on the presentation of her letters of introduction and the interest that was displayed by English and American organisations in the progress of child welfare work in this State.

On her return Miss Bardsley, who joined the baby clinic staff in 1923 and was appointed sister in charge at Woolloongabba in 1925, was appointed Acting Superintendent after Miss Barron went on leave in October, 1937.

THE TRAINING SCHOOL.

A very important part of our work is the training of nurses who will become clinic nurses, enter maternity and other hospitals, engage in bush nursing, or nurse privately.

During the year 55 nurses passed through the training school and received certificates in Child Welfare after examination.

ACKNOWLEDGMENTS.

Our thanks are due to the Queensland Country Women's Association for their help and co-operation in the clinic work. Many of the country centres and sub-centres are occupying rooms belonging to this association, and in several instances special accommodation has been provided for the use of the baby clinics. The sister in charge of the baby clinic and child welfare railway car has appreciated the hospitality and assistance given by many members of the Country Women's Association during the visits of the car. The State President has rendered valuable assistance, notifying the branches of the car's prospective visits.

We express our thanks also to the Mothercraft Association, to the Department of Public Instruction, to the Railway Department and staff for the care they have taken of our nurses' comfort, to the newspapers which have published our monthly articles, to the Government Statistician and his staff, and to many good friends who have helped us. Much credit is due to our nurses for the excellent work carried out, often under trying conditions.

THE YEAR'S WORK IN DETAIL.

The work of the baby clinics has shown a steady increase during the year 1937-38. The total attendances for the whole of the Queensland centres was 213,453—an increase of 13,748 over the year 1936-37. Of this, only 726 came from new centres which were opened too late in the year to materially affect the total.

NEW BRANCHES.

Dalby, Nambour, and Atherton, previously sub-centres, were opened as resident centres, three new nurses being employed. In addition, branches were opened at Newmarket-Grange (resident centre, Herschell street, Brisbane), Kalbar and Somerset Dam (resident centre, Ipswich), Forest Hill (resident centre, Toowoomba), Miles (resident centre, Dalby), Wallumbilla (resident centre, Roma), Cooroy, Eumundi, Palmwoods, and Yandina (resident centre, Nambour), Silkwood (resident centre, Innisfail), Ravenshoe (resident centre, Atherton), and Chillagoe and Yungaburra (resident centre, Mareeba). This makes a total of 14 new branches, most of which have made a promising beginning. The clinic centres now number: Resident centre, 26; sub-centres, 78—total, 104.

VISITS TO HOMES.

The number of visits to newborn children and their mothers has increased, the figures for outdoor work now being—

Year.	Visits to Newborns.	Subsequent and Other Visits.	Total.
1935–36 ..	7,888	4,732	12,620
1936–37 ..	8,419	4,375	12,794
1937–38 ..	8,601	3,651	12,252

Number of New Cases seen at the Clinic.

—	1934–35.	1935–36.	1936–37.	1937–38.
Infants under one year	7,027	8,024	8,907	8,977
One to two years	669	781	729	618
Over two years	1,698	1,987	1,529	1,174
Total children and infants	9,394	10,792	11,165	10,769
Expectant mothers	882	1,074	1,203	1,211
Non-expectant mothers	5,671	6,748	7,625	7,751
Total mothers needing advice ..	6,553	7,822	8,828	8,962
Total new cases	15,947	18,614	19,993	19,731

Attendances of Infants and Children at Baby Clinic Centres and Sub-centres.

—	1935–36.	1936–37.	1937–38.
Metropolitan.			
Valley Centre	13,681	14,384	13,760
Branches—			
Cribb Island	306	383	284
Enoggera	817	813	520
Kedron	769	916	877
Nundah..	1,696	2,082	2,009
Sandgate	1,570	1,760	2,250
Zillmere	292	156	222
	19,131	20,494	19,922
Herschell Street Centre ..	13,457	14,720	15,863
Branches—			
Indooroopilly	697	569	582
Newmarket–Grange ..	..	..	97
	14,154	15,289	16,542
West End Centre	3,798	4,206	5,070
Woolloongabba Centre ..	14,061	15,601	15,337
Branches—			
Bulimba	898	980	1,243
Morningside	916	702	653
Yeronga	849	914	1,007
	16,724	18,197	18,240
Wynnum Centre	3,327	3,423	4,170
Country.			
Country Centres visited from Brisbane—			
Beaudesert	780	885	817
Caboolture	506	571	665
Southport	1,025	1,335	1,427
	2,311	2,791	2,909
Ipswich Centre	5,249	5,039	6,209
Branches—			
Boonah	1,058	1,200	966
Esk	299	563	550
Kalbar	..	..	17
Laidley	578	851	807
Lowood	429	607	510
Rosewood	878	768	622
Toogoolawah	367	603	603
Somerset Dam ..	..	..	101
Goodna	142	174	184
	9,000	9,802	10,569

Attendances of Infants and Children at Baby Clinic Centres and Sub-centres—*continued.*

—	1935–36.	1936–37.	1937–38.
Toowoomba Centre ..	4,939	5,527	5,546
Branches—			
Allora	484	623	437
Clifton	390	368	466
Gatton	413	432	654
Oakey	320	364	317
Pittsworth	303	554	703
Forest Hill	..	..	39
	6,849	7,868	8,162
Warwick Centre	3,440	3,373	2,832
Branches—			
Goondiwindi	408	484	483
Inglewood	242	318	392
Killarney	219	219	177
Stanthorpe	921	1,363	1,562
	5,230	5,757	5,446
Dalby Centre	1,594	2,075	2,009
Branches—			
Chinchilla	..	335	875
Miles	..	..	101
	1,594	2,410	2,985
Roma Centre	..	1,405	1,402
Branches—			
Mitchell..	..	704	1,340
Wallumbilla	..	..	51
	..	2,109	2,793
Charleville Centre	..	1,640	1,968
Branches—			
Cunnamulla	..	847	1,200
Quilpie	..	489	620
	..	2,976	3,788
Nambour Centre	980	963	971
Branches—			
Cooroy	..	..	28
Eumundi	..	..	63
Palmwoods	..	..	31
Yandina	..	..	30
	980	963	1,123
Kingaroy Centre	..	217	1,766
Branches—			
Murgon	..	172	1,047
Nanango	..	86	748
Wondai	..	106	436
	..	581	3,997
Gympie Centre	3,571	3,881	3,347
Branch—			
Pomona	..	88	568
	3,571	3,969	3,915

ATTENDANCES OF INFANTS AND CHILDREN AT BABY CLINIC CENTRES AND SUB-CENTRES—*continued.*

—	1935–36.	1936–37.	1937–38.
Gayndah Centre	..	30	352
Branches—			
Biggenden	..	51	199
Eidsvold	..	47	358
Mundubbera	..	72	436
	..	200	1,345
Maryborough Centre ..	5,402	5,632	7,351
Branches—			
Childers	..	35	627
Howard	..	244	592
Pialba	..	58	389
	5,402	5,969	8,959
Bundaberg Centre	6,120	6,618	6,171
Rockhampton Centre ..	7,969	9,340	10,020
Branches—			
Gladstone	1,107	1,487	1,605
Mount Morgan ..	888	1,192	1,421
Mount Larcom	771	893	769
Yeppoon	581	782	652
	11,316	13,694	14,867
Barcaldine Centre	44	984	1,438
Branches—			
Aramac	26	452	774
Longreach	53	887	1,503
	123	2,323	3,715
Mackay Centre	7,404	8,524	7,398
Branches—			
Bowen	771	1,443	1,401
Proserpine	1,222	1,274	1,655
Sarina	613	638	845
	10,010	11,879	11,299

ATTENDANCES OF INFANTS AND CHILDREN AT BABY CLINIC CENTRES AND SUB-CENTRES—*continued.*

—	1935–36.	1936–37.	1937–38.
Townsville Centre	9,688	11,676	10,054
Branches—			
Ayr	1,596	3,024	2,240
Home Hill	1,606	1,370	1,490
Ingham	908	1,706	1,400
	13,798	17,776	15,184
Charters Towers Centre ..	2,955	3,436	3,743
Innisfail Centre	1,546	1,994	2,077
Branches—			
Babinda	1,205	1,307	1,556
El Arish	..	29	105
Silkwood	..	..	49
Tully	..	204	771
	2,751	3,534	4,558
Cairns Centre	5,896	6,211	4,927
Branches—			
Edmonton	346	302	223
Gordonvale	1,016	1,063	1,067
Mossman	..	105	747
	7,258	7,681	6,964
Mareeba Centre	..	184	837
Branches—			
Chillagoe } Opened June, 1938	..	..	4
Yungaburra } Opened June, 1938	..	..	..
	..	184	841
Atherton Centre	797	943	1,043
Branches—			
Herberton	..	104	513
Malanda	..	110	265
Millaa Millaa	..	52	295
Ravenshoe (Opened June, 1938)	..	..	9
	797	1,209	2,125

BABY CLINIC AND CHILD WELFARE RAILWAY CAR.

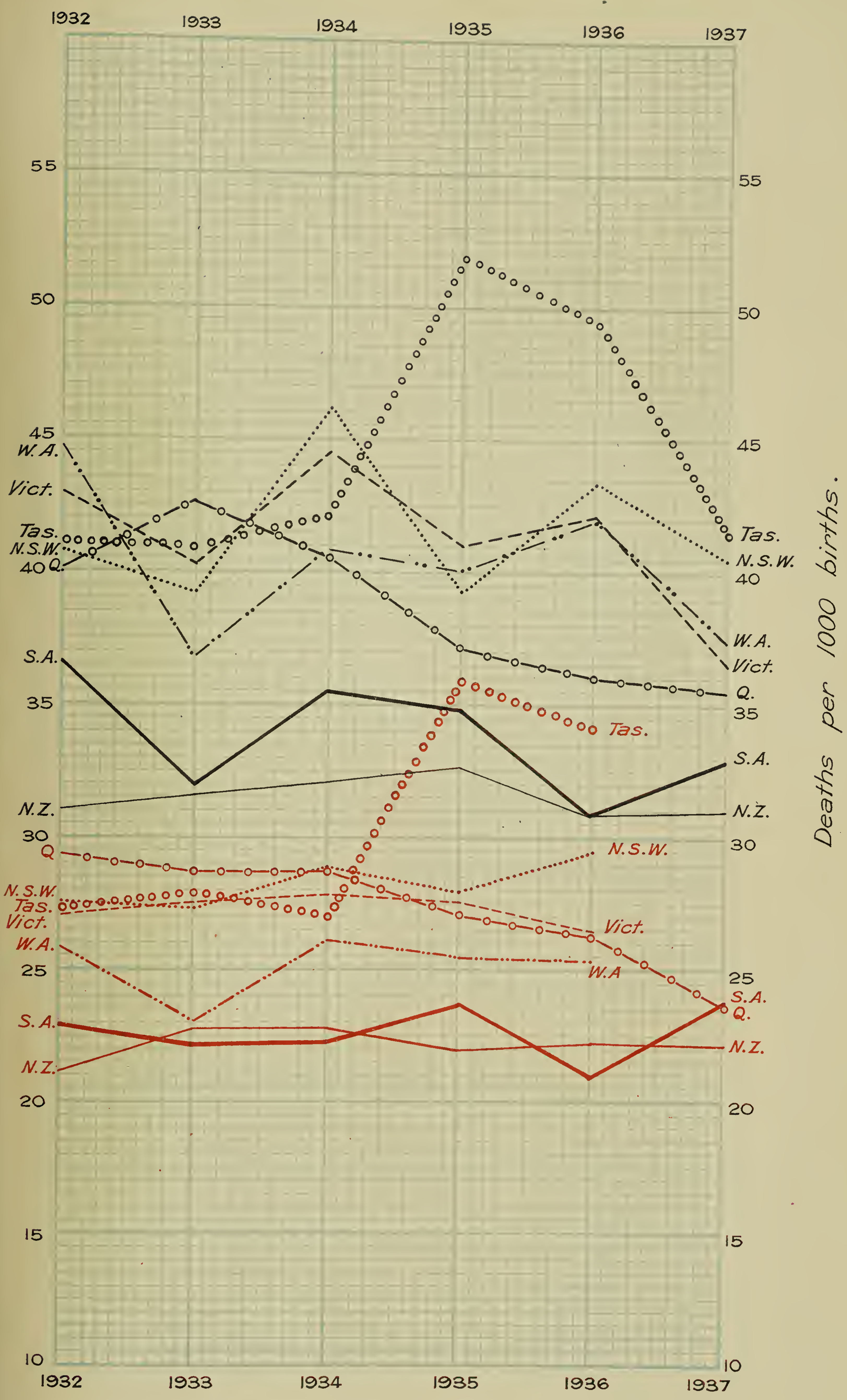
Centres visited, 159; children and mothers attending for advice, 1,192; number of women present at health lectures, 593; number of school children at health lectures, 7,400. Owing to the increase in the number of clinic centres opening throughout the State, the car stops mostly at places of very small populations, with a consequent decline of attendances in all sections.

THE ANTENATAL CLINICS.

The two antenatal clinics have made steady progress under the direction of Dr. Beatrice Warner. The attendances numbered as follows:—

—	1935–36.		1936–37.		1937–38.	
	New Cases.	Attendances.	New Cases.	Attendances.	New Cases.	Attendances.
Fortitude Valley	335	1,154	295	1,062	351	1,356
Woolloongabba	245	924	304	997	272	945
Totals	580	2,078	599	2,059	623	2,301

I am, Sir,
Yours faithfully,
T. HENRY R. MATHEWSON,
Acting Director of Infant Welfare.



GRAPHS SHOWING INFANT MORTALITY RATES
FOR STATES OF COMMONWEALTH & N. ZEALAND.

Black for first year. Red for first month (Figures are not available for all the States.)

ANNUAL REPORT

OF THE

CHIEF MEDICAL OFFICER, SCHOOL HEALTH SERVICES

LESLIE ST. VINCENT WELSH, M.R.C.S. (Eng.), L.R.C.P. (Lon.),

FOR

1937-38

Including Report of the

CHIEF INSPECTOR, SCHOOL DENTAL SERVICES

E. W. HAENKE, L.D.Q.

AND THE

WILSTON OPHTHALMIC SCHOOL HOSTEL

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Report of the Chief Medical Officer, School Health Services.

SIR,—I have the honour to present my Annual Report on the School Health Services, including the School Dental Service.

The good health of the school child is not merely a matter of passing interest—it is definitely bound up with the future prosperity of the State, and, as such, invites that full measure of public interest which such an important subject deserves.

Serious check to growth over a considerable period during the early existence of animal or plant is never wholly overtaken. It is, therefore, essential that physical defects in childhood, which may have a repercussion on the health of the individual in middle life, should be detected and, if possible, remedied at the earliest favourable opportunity.

FUNCTION OF THE SCHOOL HEALTH SERVICES.

The School Health Services have a dual function—

(*a*) Corrective or curative;
(*b*) Preventive.

Under the first heading may be placed those activities of the medical, dental, and nursing sections which seek out all departures from normal health, and arrange for surgical and medical treatment by, or through, family medical attendants; or which carry out surveys of the mouths of all primary school children, with recommendations as to dental treatment of conditions other than superficial cavities or fissures by the family dentist.

Under (*b*) are grouped all medical, dental, and nursing duties which deal with the prevention of disease in school children and, consequently, include supervision of water supply, sanitation, ventilation, lighting, and refuse disposal; the employment of means to prevent outbreaks of infectious disease, such as measles, mumps, scarlet fever, diphtheria, cerebro-spinal meningitis, infantile paralysis, and whoopng cough, either by investigating any case of suspicious illness, excluding the child and quarantining the immediate contacts, or by the employment of means to immunise the suspectible against infection. In the case of the dental section, this aspect involves the filling of superficial cavities and fissures which do not involve sensitive dental pulp.

The creation of a Ministry of Health was forecast in the School Health Report for 1929-30, since when that consummation, devoutly to be wished, has been brought about with the happiest results. The details of that plan, in so far as the School Health Services is concerned, have now taken concrete form, and the future is bright with the promise of greater expansion, greater effort, and an added scope for work which must be the foundation upon which to build a sound education, coupled with vigorous bodily health.

The teaching of the principles of personal health, dental hygiene, and public health in the schools in form suitable to grade would help to engender a love of healthy surroundings, a desire for higher standards of living, and awaken civic pride. Left till the child has reached adult life, much of the value of education along the above lines is lost. In the child it becomes fabricated with his system of life; in the adult it is merely an addition, often out of keeping with the rest of his make-up.

INFECTIOUS DISEASES.

The problems associated with the management of infectious diseases in schools are difficult, and, in many cases, a solution has not been found from the school viewpoint. Take measles as an instance. This disease is still uncontrollable. Loss of valuable school-time results from enforced idleness arising from exclusion for measles and whooping cough, &c., while the infection of common cold is spread liberally by children who are admitted to school suffering with this complaint. Were teachers more familiar with the general signs and symptoms of the more common infectious diseases, especially in their early incubation, there might be less illness among their charges.

Some years back diphtheria was a matter of grave concern, and took a heavy toll both in life of schoolchildren and loss of schooling. The cost of swabbing surveys was extremely heavy; it was not uncommon to swab the throats of 800 or 1,000 children. Each swab tube is worth, roughly, sixpence, and, in addition, there was the time of the Laboratory officials employed in staining and microscopically examining each tube to be taken into consideration. Consequently, such a survey might easily cost the Health Department £20 to £25.

DIPHTHERIA IMMUNISATION.

The School Health Department has complete faith in this prophylactic measure, and, after demonstrating its innocuousness to Local Authorities in various parts of the State by giving over 26,000 injections, confidence in this valuable means of reducing the diphtheria incidence of the school population was established.

The most cordial co-operation exists between Local Authorities and the School Health Services, whose aims in seeking to prevent diphtheria have become identical. The Department of Public Instruction has given permission to this Department to immunise children against diphtheria at the schools, and this has solved the otherwise difficult problem of arranging for the concentration of children in suitable localities and has minimised the distances to be travelled by the doctor, thus conserving his valuable time.

Some idea of the fall in diphtheritic incidence can be gained from the following figures; and it must be remembered that the early days (1930-31) had a very much smaller number of cases for immunisation, but that the numbers immunised each year have progressively risen:—

In	Cases.
1931	1,071
1932	835
1933	781
1934	624
1935	439

The growth of the nursery school movement provides means for properly caring for the child between the ages of two and six, and universal diphtheria immunisation should be satisfactorily undertaken at such institutions. In previous reports I have drawn attention to this very gravely neglected period in the child's growth and development—a period, the proper planning of which is of vital importance if he or she is to receive that medical and dental care and attention which the child's existence merits.

DENTAL TREATMENT.

The subject of dental treatment of school children has always been one to exercise the minds of authorities dealing with school health services. It is contended that it is useless to spend money on medical inspection or medical and surgical treatment of school children unless their dental requirements have been fully dealt with. It has always been the practice in the School Health Services to allocate a larger portion of the vote to prophylactic dentistry. Crowns, pulp treatment, root treatment and fillings, involving the sensitive portions of the dental apparatus have a place normally in the school dental service, and full dental service finally demands inspection and treatment of every eligible child, at least over twelve months of age. The fact that a septic condition of the mouth may result in the absorption of intense toxins which will poison the whole system, especially the heart, kidneys, and liver, and may even produce certain forms of insanity, indicates how all-important is the subject of dental health.

In any school where the teeth of the children have been neglected, hundreds of crusts will be seen which have been cast aside during the lunch hour. The children, apart from any refusal to masticate, are physically incapable of doing so owing to the tenderness of the dental apparatus; hence the extreme importance of giving full attention to this cause of physical disability.

SCHOOL NURSING SECTION.

The School Nursing Staff has carried out excellent work during the year, but it has been considerably hampered in routine duty owing to the outbreak of infantile paralysis. These officers were, in many cases, called upon to visit the class contacts of anterior poliomyelitis cases occurring in children of school age, and also to visit the homes of actual sufferers from the disease. During this period members of the nursing staff visited 1,483 and travelling a distance of 14,000 miles by car. Consequently, duties in other directions were held up. The work of the school nursing sister has become increasingly valuable, and she acts as liaison officer in many instances between teacher and parent; there are many problems not entirely in the province of the teacher which she is able to thrash out with the parent and give valuable advice. Moreover, she frequently acts as an attendance officer, investigating the cause of the child's absence from school. Her assistance in the case of an epidemic is invaluable, especially with infectious diseases such as measles, mumps, scarlet fever, diphtheria, &c. Her advice is regularly listened to by parents, and she becomes more or less a guide, philosopher, and friend to many of the poorer-class mothers who may find it difficult to obtain medical advice.

It is for this reason that the practice of allocating a district to each of the nursing staff has been greatly extended within the last few years. This scheme is bearing more and more fruit. The staff sister becomes thoroughly acquainted with her district and the people in it. She gets to know them, and they her, and there is mutual respect which engenders confidence.

The nursing staff also report cases of malnutrition, cases where children appear to be neglected, cases of pre-school children who apparently require treatment for deafness, blindness, or some serious physical defect. Reports of these officers are carefully considered and sent on to the proper authority, who makes due inquiry.

Nurses have co-operated also, as in previous years, with the work done by the inspectors under the direction of the microscopist of the hookworm campaign. (This activity is separately discussed in Appendix C to the general report.)

The School Health Service has been carrying out investigations in heights, both sitting and standing, and weights of primary school children. It is intended to obtain a "norm" for the various districts of the State, and already large numbers have been examined in the Brisbane area. Conditions under which the children live are taken into consideration, and the family history is recorded against each, showing the nature of the father's occupation, whether in work or not, the district in which the child lives, and the type of food, if possible, which it consumes, also any diseases from which it has suffered which might have had an effect upon its stature and general development. Later, it is proposed to discuss tropical areas with the Director-General with a view to arriving at the most suitable areas in which to make further surveys respecting the more northerly situated children.

School Lighting.

The question of sight of children is one which requires a considerable amount of investigation. The conditions under which many children have to work in schools has, in the past, been highly unsatisfactory. The modern buildings are gradually improving the lighting of classrooms, but even here there is much left to be desired when other buildings have been constructed in close proximity, thereby shutting out the natural light. With the object of investigating this matter, a member of the staff has been detailed to carry out a series of trials with the Western Electric Photometer, which instrument is sensitive to light and indicates clearly how much of a room is suitable for ordinary work. The schoolroom is divided up into squares, 3 feet each way, and plans are kept and the readings plotted out. Care is taken that this investigation is carried out in the middle of the day and only on days in which full sunshine is available, it being argued that, if the light of certain parts of the room is unsatisfactory under these conditions, it will certainly be still less satisfactory when the weather is cloudy or when the sun has fallen to a lower angle.

Auditory Acuity.

Much concern is felt respecting the auditory acuity of many children, and, to this end, it is proposed to make a survey with an audiometer. Some two years ago the Chief Medical Officer brought this matter to the notice of the Institute for Technical Research, of which he is a member, requesting that the necessary apparatus be provided for this research. Unfortunately, up to the present, nothing further has eventuated, but a week or two ago the subject was revived, and this year it may be possible to carry out this most valuable investigation. There is little doubt that many children do not hear clearly what is said by their teachers, with the result that much of their education is defective, especially in pronunciation of words. Recently an example of this was brought under the writer's notice. A child was asked what was the equator, to which the reply was, "A 'menagerie lion' running round the earth." Auditory acuity is extremely important in many callings; re-education or correction may be the means of saving hearing later in life, and of saving many lives which would otherwise have been lost through accidents due to faulty hearing.

The School Health Services section is receiving much greater professional support now that medical practitioners realise that there is no interference by this activity in their sphere of action, but, rather, that it seeks to obtain the hearty co-operation and assistance of all members of the profession, whether general practitioners or specialists, due to the procedure employed—namely, endeavouring to persuade parents to take their children to their own medical practitioners for diagnosis and treatment when such children are found to be below par in health or requiring some surgical attention. The profession is now giving every assistance in this respect.

OPHTHALMIC SECTION.

In respect of eye defects, plans for considerable extension of activity are under discussion. At present there is a small fund which enables glasses to be provided for school children of parents in indigent circumstances. During the past year school staff sisters have reported seventeen cases, and glasses have in each instance been provided after proper investigation and report by the Police Department as to the parents' circumstances. This has been of extreme value in enabling children who suffered severely from eyestrain to carry on with their studies satisfactorily.

The Wilson Ophthalmic Hostel is nearing completion. It is a magnificent building fitted with every convenience for the work that it is intended to carry out. Some sixty children will be housed in the institution. Some people are, apparently, under the impression that trachoma is a disease which can be dealt with when found out in Western Queensland. Every child of school age should receive treatment at the hostel, and every other person, both below school age or over school age, should also receive attention. It is not so much the danger of infection as the danger of the child having gross impairment of sight and becoming, if not a charge upon the State, certainly not a satisfactory producer of wealth.

The result of the treatment and residence in the hostel is remarkably satisfactory, for under-fed, miserable children put on weight, become happy, healthy children whose manners, bearing, and education improve immensely in a short time.

A table is appended of the findings of the School Health Services (excluding dental work) for the year.

The reports of the Chief Dental Inspector of Schools and of the Matron, Wilson Ophthalmic Hospital, are separately attached and are submitted herewith:—

TABLE OF FINDINGS.

SCHOOL HEALTH SERVICES, 1937-38.

Number of children examined by Medical Officers	4,367
Number of children notified as defective	2,436
Number of children treated by private medical practitioners	1,395
Diseases of tonsils and adenoid overgrowth	2,175
Other diseases of nose and throat	5
Defects of vision	242
Diseases of eyelids	15
Squint	19
Hearing	23
Otorrhœa	13
Heart	7
Skin diseases	4
Number of children examined by School Nurses—	
Metropolitan	16,209
Country	19,860
Number of children referred to private medical practitioners by country nurses	2,629
Number of children treated by private medical practitioners	1,626
Number of homes visited by school nurses	2,665
Apparent physical defects discovered by Country School Nurses and recommended to private medical practitioners for diagnosis and treatment—	
Tonsils and adenoid overgrowth	1,398
Vision	387
Affections of eyelids	11
Squint	21
Hearing	17
Otorrhœa	10
Skin diseases	254
Scabies (referred to City Health Officer for treatment)	72
Number of children found to be vaccinated—	
In Australia	6
Out of Australia	268
Number of cases of diphtheria in school children	356
Number of schools swabbed	6
Number of pupils swabbed	1,264
Number of pupils found to be carriers	30
Percentage of carriers	2.5
Number of cases of scarlet fever in school children—	
Metropolitan	95
Country	137

L. ST. VINCENT WELCH,
Chief Medical Officer, School Health Services.

SCHOOL DENTAL SERVICE.

Sir,—I submit my general report on the operation of the system of School Dental Service for the year 1937-38.

Change of Control.

After a period of over a quarter of a century's association with the Department of Public Instruction, an official change was effected in the control of the School Dental Service during the year, and as from 1st October, 1937, the Service became an activity of the Department of Health and Home Affairs.

The history of the Service's attachment to the Education Department reveals some interesting developments. From a professional staff-strength of one dental officer the staff-personnel increased to a quota of fifteen full-time officers, whilst the annual dental operations gratuitously performed under the scheme expanded from 1,950 in the first year's activity to 122,787 in the last year's record.

Though appreciative cognisance is taken of such developments, the situation is not yet fully met. An analysis of records shows clearly that, of late years particularly, the expansion of the Service has not been commensurate with growing requirements.

Inspection.

A summarised table of the total findings revealed, amongst non-metropolitan children, at the detailed examinations by the full staff of the school dental officers, is recorded hereunder:—

Number of Children Examined.	Number with Sound Mouths.	Condition of Mouth.			Use of Toothbrush.			Permanent Teeth.			Carious Teeth.		Permanent Carious Teeth.		Percentage of Children with Dirty Mouths.	Total Number of Permanent Carious Teeth.	Average Number of Permanent Carious Teeth per Child.
		Clean.	Fair.	Dirty.	A	B	C	Lost or Extracted.	Six-year Molars Extracted.	Filled.	Permanent.	Temporary.	Saveable.	Unsaveable.			
28,090	3,980	7,968	18,121	2,001	7,541	17,048	3,501	9,416	6,527	40,180	50,563	32,303	44,967	5,596	7	50,563	1·8

In addition to the above, 14,103 children were dentally examined in the metropolitan schools in connection with the medical inspections. Thus the complete number of children who were dentally inspected for the year was 42,193.

Clinical Phase of Service.

A very real and constantly recurring problem is the case of the child from twelve to fourteen years of age, who, because he has been denied the privilege of an early operative service with follow-up attention at reasonably short intervals, now presents teeth that are attacked with caries to such an advanced degree as to make immediate conservation quite an impracticable proposition. To spend an excessive amount of time in attempting a complete conservative service for this one child now possibly results in the neglect of a considerable number of other mouths. Clearly recognising this fact, the dental officers' treatment of special cases is carried out on the following basis:—

1. Conservative attention restricted to those favourable cases in which the mouth can be rendered sound without prolonged attention;
2. Advanced cases requiring prolonged attention restricted to emergency service—treatment for the relief of suffering.

By such action the disadvantageous absorption of valuable treatment-time is reduced to the minimum and, comparatively speaking, we serve the many and avoid a limitation of our ministrations to the few.

To be successful in the exclusive practice of dentistry for children, operative skill is imperative, but it is secondary in importance to the psychological understanding and control of the child. Children are keenly observant and very impressionable. They form their likes and dislikes for a stranger very quickly; therefore, it is necessary, from the very first contact, to make no false move. It is the officer who has the appealing way that meets with the fullest measure of success. As a general rule, children are quite responsive to suggestion. Frequently their management must become an individual problem, with the factor of individual differences an important consideration. One child may appear shy and timid, whilst another is aggressive; one may act one way in one situation, and quite differently in another. Even in the same family no two children live in the same environment. The very first thing which the operator must aim to accomplish is to put the child at ease in his presence. If he can but find the child's world—whatever it is—and look through his glasses, the approach to success will be opened. The simplest method of putting a child at ease is to engage him in purposeful conversation. It requires skill to talk to a child, and adroitness to act rightly on his responses. Remarks concerning a cherished doll, a new dress, a pet or hobby that is made to assume a role of interest that is common to both operator and patient, all help to make a ready acquaintance, which, carefully pursued, can invariably be turned into a quiet confidence and an ultimate acquiescence to heroically face any situation.

For school dentistry to assume its full responsibility in the clinical sphere, it must more and more recognise child guidance and proper child management as an ally of paramount importance.

That the school atmosphere or school environment is a highly favourable venue for the application of children's dental service has been the gratifying experience of the whole staff of school dental officers since the inception of School Dental Service in Queensland. It is not an uncommon experience for departmental officers to find that, included in their successes, there has been a number of cases where repeated endeavours had previously been made by parents to secure the needed attention through the ordinary channel of established dental surgeries, but without avail. True, in these as in other cases, there ever exists the call for the exercise on the part of the operator of a sound knowledge of child management and an infinite measure of patience, ingenuity, and sympathetic understanding, but it nevertheless is a fact that the school environment is an aid to success that cannot be ignored.

That the percentage of intractable cases of the whole school dental staff continues at the satisfactory level of less than 3 per cent. is a pleasing testimony to the possibilities of the Service.

The total amount of treatment resulting from the different clinical activities connected with the scheme is set forth in the subjoined table:—

Number of Children Treated.	Total Number of Operations Performed.	Number of Extractions.	Number of Fillings.	Number of Other Treatments.
20,942	112,248	40,119	53,506	18,623

From the practical viewpoint of results achieved, the system can justly claim to be an essential cog in the great wheel of health progress. That the future may provide extended and more embracing opportunities for it to demonstrate its vital relationship is the earnest hope of every member of the staff.

E. W. HAENKE,
Chief Dental Inspector of Schools.

WILSON OPHTHALMIC SCHOOL HOSTEL.

I have the honour to submit the Ninth Annual Report of the above hostel.

The daily average for the year was 31·5—the highest since the hostel was opened.

This has been a year of epidemics—german measles, chickenpox, and, worst of all, whooping cough. This, coupled with the ban on travelling owing to the presence of infantile paralysis in Queensland, has kept our numbers of admissions and discharges each eight below that of last year. However, we have now a clean bill of health, and children are permitted to travel; so six children will leave for the North and West during the next fortnight, and four more a little later, and arrangements have been made to bring other children here in their places.

The average length of stay of a child, counting since the opening of the hostel, is 16½ months.

The opening of the new hostel at Windsor, last March, was a very interesting event, and we are greatly looking forward to the day when we can move into our new home.

Number of children on hostel roll 30th June, 1937	18 boys, 16 girls.
Number admitted during year ending 30th June, 1938	10 boys, 9 girls.
Number discharged during year ending 30th June, 1938	11 boys, 9 girls.
Remaining in hostel 30th June, 1938	17 boys, 16 girls.
Daily average	31.5

Admitted to Hospitals—	
Acute Rheumatism	1
Measles	1
Otitis Media	2
Tonsillectomy	12
Chickenpox	3
Appendicectomy	2
Setting Colles Fracture	1
Total	22
Sickness at Hostel—	
German Measles	20
Whooping Cough	17
Chickenpox	11
Total	48
Out Patients at Hospitals—	
X-ray	4
Other attendances	3
Total	7

Dental Cases (Examination or treatment).
All the children.

Immunisation	13 cases

F. G. WALPOLE, Matron.

ANNUAL REPORT

OF THE

INSPECTOR OF HOSPITALS FOR THE INSANE

JOHN COFFEY, F.R.C.S. (Ed.), L.R.C.P., D.P.H., L.M. (Rot.), F.R. San. I. (Lond.)

FOR

1937-38.

Including the Rockville Epileptic Home, Willowburn.

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Information Contained in the Report of the Inspector of Hospitals for the Insane for the Year 1937-38.

Sir,—I have the honour, in compliance with section 60 of *"The Insanity Act of* 1884," to present a report on the State Hospitals for the Insane and the Townsville Reception House in Queensland for the twelve months from 1st July, 1937, to 30th June, 1938.

HOSPITALS FOR THE INSANE, GOODNA, WILLOWBURN AND IPSWICH.

TABLE I.

Admissions, Readmissions, Discharges, and Deaths during the Year ending 30th June, 1938.

GOODNA.

——				Males.	Females.	Total.
On the books of the Hospital on 1st July, 1937				1,015	675	1,690
	Males.	Females.	Total.			
Admitted for the first time during the year	253	180	433			
Readmitted during the year	45	45	90			
Transferred from Toowoomba during the year	..	1	1			
Transferred from Ipswich during the year	25	6	31			
				323	232	555
Total under care during the year				1,338	907	2,245
Discharged, died, transferred—						
Discharged recovered	65	71	136			
relieved	8	15	23			
not improved	3	3	6			
Transferred to Toowoomba	1	22	23			
Transferred to Ipswich	41	18	59			
Died	110	82	192			
Total discharged, died, &c., during the year				228	211	439
Remaining on the books of the Hospital on 30th June, 1938				1,110	696	1,806
Average number daily resident during the year				1,049	648	1,697
On leave of absence on 30th June, 1938				27	59	86

TOOWOOMBA.

——				Males.	Females.	Total.
On the books of the Hospital on 1st July, 1937				559	604	1,163
	Males.	Females.	Total.			
Admitted for the first time during the year	37	22	59			
Readmitted during the year	11	6	17			
Transferred from Goodna during the year	1	22	23			
Transferred from Ipswich during the year	1	..	1			
				50	50	100
Total under care during the year				609	654	1,263
Discharged, died, transferred—						
Discharged recovered	22	11	33			
relieved	8	6	14			
not improved	1	2	3			
Transferred to Goodna	..	1	1			
Transferred to Ipswich	1	..	1			
Died	29	37	66			
Total discharged, died, &c., during the year				61	57	118
Remaining on the books of the Hospital on 30th June, 1938				548	597	1,145
Average number daily resident during the year				541	578	1,119
On leave of absence on 30th June, 1938				12	13	25

TABLE I.—*continued.*

IPSWICH.

—				Males.	Females.	Total.
On the books of the Hospital on 1st July, 1937				369	146	515
	Males.	Females.	Total.			
Admitted for the first time during the year	1	1	2			
Readmitted during the year	..	..	..			
Transferred from Toowoomba during the year	1	..	1			
Transferred from Goodna during the year	41	18	59			
				43	19	62
Total under care during the year				412	165	577
Discharged, died, transferred—						
Discharged recovered	1	2	3			
relieved	1	..	1			
not improved	..	..	..			
Transferred to Goodna	25	6	31			
Transferred to Toowoomba	1	..	1			
Died	15	11	26			
Total discharged, died, &c., during the year				43	19	62
Remaining on the books of the Hospital on 30th June, 1938				369	146	515
Average number daily resident during the year				369	144	513
On leave of absence on 30th June, 1938				1	1	2

TABLE II.

Admissions, Discharges, and Deaths, with the Proportions of Recoveries and Deaths per cent., during the year ending 30th June, 1938.

Admitted.			Readmitted.			Discharged.									Died.			Remaining on 30th June, 1938.			Average Number Daily Resident.			Percentage of Recoveries on Admissions.			Percentage of Patients Relieved.			Percentage of Deaths on Average Number Resident.		
						Recovered.			Relieved.			Not Improved.																				
Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
GOODNA.																																
253	180	433	45	45	90	65	71	136	8	15	23	3	3	6	110	82	192	1,110	696	1,806	1,049	648	1,697	21·81	31·55	26·003	2·68	6·66	4·39	10·48	12·65	11·31
TOOWOOMBA.																																
37	22	59	11	6	17	22	11	33	8	6	14	1	2	3	29	37	66	548	597	1,145	541	578	1,119	45·83	39·28	43·42	16·66	21·42	18·42	5·36	6·40	5·89
IPSWICH.																																
43*	19*	62*	..	..	..	1	2	3	1	..	1	..	..	..	15	11	26	369	146	515	369	144	513	2·32	10·52	4·83	2·32	..	1·61	4·06	7·63	5·06

* Admissions—Transfer.

TABLE III.

Forms of Mental Disorders in Patients admitted during the Twelve Months ending 30th June, 1938.

—	Goodna.		Toowoomba.		Ipswich.		Grand Total.
	Males.	Females.	Males.	Females.	Males.	Females.	
1. Affective Reaction Types—							
(*a*) *Manic Depressive*—							
Mania	7	7	..	..	..	..	14
Acute mania	11	5	6	3	..	..	25
Chronic mania	1	..	..	..	..	..	1
Recurrent mania	4	10	..	..	..	..	14
Melancholia	11	16	..	..	6	..	33
Simple melancholia	1	..	..	..	..	..	1
Acute melancholia	3	7	2	3	..	..	15
Agitated melancholia	1	..	..	..	..	..	1
Chronic melancholia	..	..	..	1	..	..	1
Delusional melancholia	2	1	..	..	..	..	3
Hypochondriacal melancholia	9	5	..	..	..	..	14
Recurrent melancholia	1	10	..	..	..	..	11
Resistive melancholia	1	3	..	..	..	..	4
Stuporose melancholia	2	2	..	..	..	..	4
Melancholia agitans	1	7	..	..	..	..	8
Alternating insanity	1	3	..	..	..	..	4
Recurrent insanity	1	..	..	..	..	2	3
(*b*) *Involutional Melancholia*	..	4	1	2	..	..	7
2. Schizophrenic Reaction Types—							
(*a*) *Dementia Praecox*—							
Simple	3	3	3	..	2	..	11
Hebephrenic	19	20	3	..	8	1	51
Katatonic	16	8	6	3	3	2	38
Paranoid	13	4	5	..	..	..	22
(*b*) *Paraphrenia*	30	19	1	2	12	8	72
3. Paranoid Reaction Types—							
(*a*) *Paranoia*	4	..	..	..	1	..	5
(*b*) *Paranoid States*	6	2	..	..	..	..	8
(*c*) *Folie à Deux*	..	1	..	..	..	..	1
4. Epileptic Reaction Types—							
Idiopathic—							
Grand mal	15	8	2	5	..	..	30
Petit mal	3	..	..	..	..	..	3
5. Organic Reaction Types—							
(*a*) *Acute Confusional and Exhaustion Psychoses*	13	10	1	2	1	..	27
(*b*) *Toxins*—							
Exogenous—							
Alcoholic hallucinosis	12	..	7	..	2	..	21
Alcoholic polyneuritis	1	..	..	..	1	..	2
Alcoholic neurosis	1	..	..	..	..	..	1
Alcoholic dementia	..	..	1	1	..	..	2
Infections—							
Syphilis—							
Dementia paralytica	9	1	..	..	..	..	10
Neurosyphilis	6	9	..	..	..	..	15
Encephalitis—							
Acute	..	1	..	..	..	..	1
Post	..	1	..	..	..	..	1
Endogenous—							
Acromegaly	1	..	..	..	..	..	1
Uraemia	..	1	..	..	..	..	1
(*c*) *Degenerative Brain Changes*—							
Senile dementia	42	22	3	4	1	..	72
Arteriosclerosis	11	6	..	..	..	..	17
Paralysis agitans	2	..	..	..	..	..	2
Cerebral hæmorrhage	..	1	..	..	..	..	1
Cerebral oedema	..	1	..	..	..	..	1
Chorea	..	1	..	..	..	..	1
Chronic cortical atrophy	..	1	..	..	..	..	1
(*d*) *Organic Brain Disease*—							
Disseminated sclerosis	2	1	..	..	..	..	3
(*e*) *Trauma*	2	..	..	..	..	..	2
6. Psychoneurotic Reaction Types—							
Obsessional	2	2	..	..	..	..	4
Compulsive	..	1	..	..	..	..	1

TABLE III.—*continued.*

FORMS OF MENTAL DISORDERS IN PATIENTS ADMITTED DURING THE TWELVE MONTHS ENDING 30TH JUNE, 1938.

—	Goodna.		Toowoomba.		Ipswich.		Grand Total.
	Males.	Females.	Males.	Females.	Males.	Females.	
7. MENTAL DEFICIENCY—							
(*a*) *Idiocy*	5	1	..	..	..	..	6
With epilepsy	2	1	..	1	..	..	4
Without epilepsy	2	1	..	..	..	..	3
(*b*) *Imbecility*	13	9	..	..	5	5	32
With epilepsy	..	..	1	..	1	..	2
(*c*) *Feebleminded* (*Morons*)	2	4	5	1	..	..	12
(*d*) *Moral Deficiency*	4	5	..	..	..	1	10
8. UNCLASSIFIED PSYCHOSIS—							
Unknown	..	..	1	..	..	..	1
Totals	298	225	48	28	43	19	661

TABLE IV.

GOODNA, TOOWOOMBA, AND IPSWICH.

BODILY HEALTH AND CONDITION OF PATIENTS ADMITTED DURING TWELVE MONTHS ENDING 30TH JUNE, 1938.

Bodily Condition.	Goodna.		Toowoomba.		Ipswich.		Grand Total.
	Males.	Females.	Males.	Females.	Males.	Females.	
In apparently good health and condition	152	148	31	15	37	18	401
In indifferent health and reduced condition ..	91	62	3	4	5	..	165
In bad health and exhausted condition	55	15	14	9	1	1	95
Totals	298	225	48	28	43	19	661

RETURNED SOLDIER PATIENTS.

The following tables show the number of returned soldier patients who have been certified as insane and admitted or transferred from another mental hospital in the State to each of the institutions—A, during the past twelve months; B, from the commencement of the war to 30th June, 1938.—

TABLE V.—GOODNA, TOOWOOMBA, AND IPSWICH.

—	A.						B.						
	Admitted.	Transferred.	Total Admitted.	Discharged or Transferred.	Died.	Remaining.	Admitted.	Transferred.	Total Admitted.	Discharged or Transferred.	Died.	Remaining.	Doubtful.
Goodna	32	3	35	8	3	24	642	4	646	403	107	122	14
Toowoomba	7	..	7	5	..	2	138	13	151	95	12	44	..
Ipswich	..	..	..	..	..	..	41	..	41	12	4	25	..
Totals.. ..	39	3	42	13	3	26	821	17	838	510	123	191	14

TABLE VI.

Wassermann Tests.

The percentage of positive Wassermann's to the admissions was as follows:—

—	Goodna.			Toowoomba.			Ipswich.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Decidedly positive	10·06	6·66	8·60	2·08	. .	1·31	. .	. .	. .
Positive	2·68	5·77	4·01	. .	. .	. .	. .	. .	. .
Slightly positive	2·68	7·11	4·58	2·08	3·57	2·63	. .	. .	. .
Very slightly positive	3·02	3·11	3·05	. .	. .	. .	. .	. .	. .
On all degrees of positive reaction	18·44	22·65	20·24	4·16	3·57	3·94	. .	. .	. .

TABLE VII.

Districts whence Patients were Received during the Twelve Months ending 30th June, 1938.

Districts.	Goodna.		Toowoomba.		Ipswich.		Total.
	Males.	Females.	Males.	Females.	Males.	Females.	
Northern and North-Western Districts	61	30	. .	1	. .	. .	92
Central Districts	20	12	1	. .	. .	. .	33
Southern and South-Western Districts	217	183	47	27	1	1	476
Totals	298	225	48	28	1	1	601

TABLE VIII.

Previous Occupations of Patients Admitted during the Twelve Months ending 30th June, 1938.

Occupations.	Number.						Grand Total.
	Goodna.		Toowoomba.		Ipswich.		
	Males.	Females.	Males.	Females.	Males.	Females.	
Accountant	1	. .	. .	. .	. .	. .	1
Agent	1	. .	. .	. .	. .	. .	1
Apprentice	. .	. .	. .	. .	1	. .	1
Artist	. .	1	. .	. .	. .	. .	1
Assayer	1	. .	. .	. .	. .	. .	1
Baker	3	. .	. .	. .	. .	. .	3
Bank official	1	. .	. .	. .	. .	. .	1
Barber	1	. .	. .	. .	. .	. .	1
Billiard marker	1	. .	. .	. .	. .	. .	1
Blacksmith	1	. .	. .	. .	1	. .	2
Boot repairer	2	. .	. .	. .	1	. .	3
Bricklayer	2	. .	. .	. .	. .	. .	2
Builder	1	. .	. .	. .	. .	. .	1
Bushman	2	. .	. .	. .	1	. .	3
Butcher	1	. .	1	. .	. .	. .	2
Cane cutter	1	. .	. .	. .	. .	. .	1
Carpenter	7	. .	. .	. .	. .	. .	7
Carter	2	. .	. .	. .	. .	. .	2
Cellarman	1	. .	. .	. .	. .	. .	1
Chemist	1	. .	. .	. .	. .	. .	1
Child	4	3	5	2	. .	. .	14
Clerk	4	1	1	. .	3	. .	9
Cook	2	. .	1	. .	. .	. .	3
Dealer	1	. .	. .	. .	. .	. .	1
Drover	1	. .	. .	. .	. .	. .	1
Domestic duties	. .	77	. .	6	. .	7	90
Dressmaker	. .	3	. .	. .	. .	. .	3
Electric mechanic	1	. .	1	. .	. .	. .	2
Engineer	3	. .	. .	. .	. .	. .	3
Farm labourer	11	. .	4	. .	1	. .	16
Farmer	23	. .	5	. .	4	. .	32
Fisherman	1	. .	. .	. .	. .	. .	1
Fitter	2	. .	. .	. .	1	. .	3
Fruitgrower	1	. .	. .	. .	. .	. .	1
Gardener	3	. .	. .	. .	. .	. .	3
Grazier	2	. .	2	. .	. .	. .	4

TABLE VIII.—*continued.*

PREVIOUS OCCUPATIONS OF PATIENTS ADMITTED DURING THE TWELVE MONTHS ENDING 30TH JUNE, 1938.

Occupations.	Number.						Grand Total.
	Goodna.		Toowoomba.		Ipswich.		
	Males.	Females.	Males.	Females.	Males.	Females.	
Housewife	. .	92	. .	16	. .	6	114
Insurance inspector	1	. .	. .	. .	. .	. .	1
Joiner	2	. .	. .	. .	. .	. .	2
Labourer	84	. .	17	. .	16	. .	117
Laundress	. .	2	. .	. .	. .	. .	2
Licensed victualler	. .	. .	. .	. .	1	. .	1
Medical practitioner	1	. .	1	. .	. .	. .	2
Miner	6	. .	. .	. .	2	. .	8
Moulder	1	. .	. .	. .	. .	. .	1
Navvy	1	. .	. .	. .	. .	. .	1
Newspaper editor	1	. .	. .	. .	. .	. .	1
Nurse	. .	1	. .	. .	. .	. .	1
Packer	2	. .	. .	. .	. .	. .	2
Painter	1	. .	1	. .	. .	. .	2
Pensioner	29	11	1	. .	1	. .	42
Pensioner, war	4	. .	. .	. .	. .	. .	4
Piano-tuner	1	. .	. .	. .	. .	. .	1
Presser	. .	. .	. .	. .	1	. .	1
Prospector	1	. .	. .	. .	. .	. .	1
Railway employee	3	. .	1	. .	. .	. .	4
Relief worker	7	. .	1	. .	. .	. .	8
Salesman	2	. .	. .	. .	. .	. .	2
Sawyer	2	. .	. .	. .	. .	. .	2
School teacher	1	3	. .	. .	. .	. .	4
Seaman	2	. .	. .	. .	. .	. .	2
Secretary	. .	1	. .	. .	. .	. .	1
Selector	2	. .	. .	. .	. .	. .	2
Sewerage miner	1	. .	. .	. .	. .	. .	1
Shearer	3	. .	. .	. .	1	. .	4
Shop assistant	1	2	. .	. .	. .	. .	3
Showman	1	. .	. .	. .	. .	. .	1
Smelter	1	. .	. .	. .	. .	. .	1
Sports teacher	. .	1	. .	. .	. .	. .	1
Station hand	2	. .	4	. .	1	. .	7
Storekeeper	1	. .	. .	. .	. .	. .	1
Sugar worker	1	. .	. .	. .	. .	. .	1
Tailor	. .	. .	. .	. .	1	. .	1
Tailoress	. .	1	. .	. .	. .	. .	1
Teamster	1	. .	. .	. .	. .	. .	1
Telegraph linesman	1	. .	. .	. .	. .	. .	1
Telephone mechanic	1	. .	. .	. .	. .	. .	1
Timbergetter	1	. .	. .	. .	. .	. .	1
Tramway employee	2	. .	. .	. .	. .	. .	2
Traveller	1	. .	. .	. .	. .	. .	1
Truck driver	2	. .	. .	. .	. .	. .	2
Typist	. .	2	. .	. .	. .	. .	2
Warehouse manager	1	. .	. .	. .	. .	. .	1
Waterside worker	1	. .	. .	. .	. .	. .	1
Woodcutter	1	. .	. .	. .	1	. .	2
Woolclasser	1	. .	. .	. .	. .	. .	1
Worker in paper trade	1	. .	. .	. .	. .	. .	1
Youth	1	. .	. .	. .	. .	. .	1
Nil	14	18	2	3	5	6	48
Unknown	15	6	. .	1	. .	. .	22
Totals	298	225	48	28	43	19	661

TABLE IX.

Length of Residence in the Hospitals of the Patients who were Discharged or who Died during the Year and of those who Remained on the Books of the Hospitals on the 30th June, 1938.

GOODNA.

Length of Residence.	Discharges.						Deaths.			Remaining.		
	Recovered.			Relieved and not Improved.								
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Under 1 month	2	2	4	2	2	4	26	11	37	29	20	49
1 month and under 3 months	17	12	29	3	5	8	14	9	23	29	35	64
3 months and under 6 months	12	12	24	2	3	5	7	9	16	59	40	99
6 months and under 9 months	14	18	32	2	5	7	7	7	14	51	29	80
9 months and under 12 months	7	7	14	..	..	..	3	1	4	42	25	67
1 year and under 2 years ..	8	14	22	1	2	3	5	15	20	103	76	179
2 years and under 3 years ..	2	2	4	1	..	1	5	4	9	78	58	136
3 years and under 5 years ..	1	2	3	..	1	1	6	10	16	135	89	224
5 years and under 7 years ..	..	1	1	..	..	..	3	2	5	85	76	161
7 years and under 10 years ..	2	1	3	..	..	..	3	6	9	102	74	176
10 years and under 12 years ..	..	..	..	..	..	..	3	2	5	51	35	86
12 years and under 15 years ..	..	..	..	..	..	..	3	1	4	71	34	105
15 years and under 20 years ..	..	..	..	..	..	..	6	1	7	97	52	149
20 years and over	..	..	..	..	..	..	19	4	23	178	53	231
Totals	65	71	136	11	18	29	110	82	192	1,110	696	1,806

TOOWOOMBA.

Length of Residence.	Discharges.						Deaths.			Remaining.		
	Recovered.			Relieved and not Improved.								
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Under 1 month	..	..	..	..	..	..	2	4	6	3	1	4
1 month and under 3 months	8	..	8	2	..	2	2	1	3	6	6	12
3 months and under 6 months	7	..	7	2	2	4	..	2	2	7	27	34
6 months and under 9 months	3	2	5	..	1	1	1	2	3	6	6	12
9 months and under 12 months	2	3	5	1	1	2	..	1	1	12	1	13
1 year and under 2 years ..	2	2	4	2	..	2	3	1	4	21	26	47
2 years and under 3 years ..	..	1	1	2	1	3	4	2	6	16	54	70
3 years and under 5 years ..	..	2	2	..	2	2	3	2	5	58	73	131
5 years and under 7 years ..	..	..	..	..	..	..	3	2	5	44	29	73
7 years and under 10 years ..	..	..	..	..	..	..	..	2	2	47	48	95
10 years and under 12 years ..	..	..	..	..	..	..	..	2	2	30	23	53
12 years and under 15 years ..	..	1	1	..	..	..	3	3	6	39	66	105
15 years and under 20 years ..	..	..	..	..	..	..	3	1	4	122	108	230
20 years and over	..	..	..	..	1	1	5	12	17	137	129	266
Totals	22	11	33	9	8	17	29	37	66	548	597	1,145

IPSWICH.

Length of Residence.	Discharges.						Deaths.			Remaining.		
	Recovered.			Relieved and not Improved.								
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Under 1 month	..	..	..	1	..	1	..	..	..	1	..	1
1 month and under 3 months	..	..	..	..	..	..	2	..	2	2	..	2
3 months and under 6 months	..	..	..	..	..	..	..	..	..	20	4	24
6 months and under 9 months	1	..	1	..	..	..	..	..	..	13	10	23
9 months and under 12 months	..	..	..	..	..	..	..	..	..	3	4	7
1 year and under 2 years ..	..	..	..	..	..	..	2	1	3	10	3	13
2 years and under 3 years ..	..	1	1	..	..	..	1	..	1	18	9	27
3 years and under 5 years ..	..	..	..	..	..	..	1	..	1	52	24	76
5 years and under 7 years ..	..	..	..	..	..	..	..	..	..	21	8	29
7 years and under 10 years ..	..	1	1	..	..	..	2	..	2	36	11	47
10 years and under 12 years ..	..	..	..	..	..	..	1	1	2	15	7	22
12 years and under 15 years ..	..	..	..	..	..	..	..	..	..	28	4	32
15 years and under 20 years ..	..	..	..	..	..	..	1	3	4	37	21	58
20 years and over	..	..	..	..	..	..	5	6	11	113	41	154
Totals	1	2	3	1	..	1	15	11	26	369	146	515

TABLE X.

Epileptic Patients.

—	Goodna.					Toowoomba.			Ipswich.		
	Males.	Females.	Total.	Doubtful. Males.	Doubtful. Females.	Males.	Females.	Total.	Males.	Females.	Total.
Remaining on 1st July, 1937	75	61	136	13	2	51	50	101	29	18	47
Admitted in the year	27	12	39	..	..	2	5	7	..	..	..
Admitted by transfer	1	..	1	..	..	..	3	3	1	1	2
Total under treatment during 12 months ended 30th June, 1938	103	73	176	13	2	53	58	111	30	19	49
Discharged during 1937–38	2	5	7	..	..	..	..	..	..	..	..
Transferred during 1937–38	..	3	3	..	..	3	6	9	2	..	2
Died during 1937–38	9	6	15	..	..	..	..	..	..	..	..
Total discharged, transferred, and died during 1937–38	11	14	25	..	..	3	6	9	2	..	2
Remaining on 30th June, 1938 ..	92	59	151	13	2	50	52	102	28	19	47
Percentage of epileptics under treatment to total number of patients under treatment during 1937–38	8·66	8·26	8·50	..	..	8·70	8·87	8·79	7·28	11·51	8·49
Percentage of epileptics remaining on books to number of patients remaining on books on 30th June, 1938	9·46	8·76	9·19	..	..	9·12	8·71	8·87	7·58	13·01	9·1
Percentage of epileptics admitted ..	9·06	5·33	7·45	..	..	4·17	17·86	9·21	..	..	..

TABLE XI.—GOODNA, TOOWOOMBA, AND IPSWICH.

Causes of Deaths during the Twelve Months ending 30th June, 1938.

Causes.	Goodna.		Toowoomba.		Ipswich.		Total.
	Males.	Females.	Males.	Females.	Males.	Females.	
General Diseases—							
Carcinoma	1	1	..	..	..	..	2
Carcinoma of stomach	..	..	2	1	..	..	3
Dysentery	1	4	..	..	..	..	5
Enteric fever	1	1	..	..	..	..	2
Influenza	1	..	2	2	1	..	6
Sarcoma	1	..	..	..	..	..	1
Diseases of Nervous System—							
Acute confusional psychoses	..	3	..	..	..	..	3
Acute encephalitis	..	1	..	..	..	..	1
Cerebral hæmorrhage	3	7	1	3	..	1	15
Cerebral softening	..	3	..	..	..	..	3
Chronic cortical atrophy..	1	..	..	..	..	..	1
Exhaustion of mania	3	2	..	..	..	..	5
Exhaustion of melancholia	1	1	..	..	..	..	2
General paralysis of the insane	3	..	1	..	..	..	4
Imbecility and idiocy	6	..	..	..	..	..	6
Hydrocephalus	..	..	..	..	1	..	1
Senile dementia	2	..	..	..	..	..	2
Spastic paraplegia	..	2	..	..	..	..	2
Status epilepticus	3	..	3	6	1	2	15
Disease of Circulatory System—							
Anæmia	..	1	..	..	..	..	1
Acute leukæmia	..	..	..	1	..	..	1
Arterio-sclerosis	5	..	..	5	2	1	13
Cardiac failure	..	..	..	..	1	2	3
Coronary atheroma	..	..	..	..	..	1	1
Coronary thrombosis	1	..	..	..	..	..	1
Endarteritis obliterans	1	..	..	..	..	..	1
Myocarditis	18	4	..	1	..	..	23
Valvular disease of heart	1	..	..	..	..	..	1

TABLE XI.—GOODNA, TOOWOOMBA, AND IPSWICH—*continued.*

Causes of Deaths during the Twelve Months ending 30th June, 1938.

Causes.	Goodna.		Toowoomba.		Ipswich.		Total.
	Males.	Females.	Males.	Females.	Males.	Females.	
Diseases of Respiratory System—							
Acute bronchitis	..	..	..	..	1	..	1
Asthma	1	1	..	..	..	..	2
Influenza with pulmonary complications ..	..	..	6	3	..	..	9
Pneumonia	..	..	1	..	..	..	1
Broncho-pneumonia	4	5	2	..	1	..	12
Hypostatic pneumonia	1	2	..	..	..	..	3
Lobar pneumonia	..	1	..	..	..	..	1
Pulmonary tuberculosis	4	1	1	2	1	..	9
Diseases of Digestive System—							
Acute intestinal obstruction	..	1	..	1	..	..	2
Catarrhal jaundice	..	1	..	..	..	..	1
Colitis	..	12	..	..	..	..	12
Cirrhosis of liver	..	..	..	..	..	1	1
Duodenal ulcer	..	..	..	1	..	..	1
Gastro enteritis	..	1	..	..	..	..	1
Gastric hæmorrhage	1	..	..	..	..	..	1
Paralysis of bowel	..	..	1	1	..	..	2
Diseases of Genito-Urinary System—							
Chronic nephritis	3	1	..	..	1	..	5
Hypernephroma	..	..	..	1	..	..	1
Pyelitis	..	..	..	..	..	1	1
Pyelo nephritis	1	..	..	..	..	..	1
Asthenia	7	1	..	..	3	1	12
Diabetes mellitus	..	..	1	..	..	..	1
Chronic osteo-myelitis	..	..	1	..	..	..	1
Injury	2	..	1	1	..	..	4
Pyæmia	..	..	..	1	..	..	1
Senile decay	31	21	5	6	2	1	66
Septicæmia	1	2	..	..	..	..	3
Suicide	1	2	1	1	..	..	5
Totals	110	82	29	37	15	11	284

Farm and Garden Produce.

The following table shows the quantities of vegetables and farm produce grown at each institution for the past twelve months:—

TABLE XII.

—	Vegetables.	Farm Produce.							
		Chaff.	Maize.	Ensilage.	Green Feed.	Potatoes.	Pumpkins and Turnips.	Hay.	Barley.
	T. C. Q. L.	T. C. Q. L.	T. C. Q. L.	Tons.	Tons.	T. C. Q. L.	T. Q. C. L.	Tons.	Tons.
Goodna	103 11 0 10	67 3 1 18	23 10 3 8	92	128	1 1 1 2	20 15 0 20	..	..
Toowoomba	93 1 0 26	..	15 7 0 16	310	49	..	..	163	..
Ipswich	48 19 0 0	19 4 0 0	..	..	83¼	..	..	3½	..
Totals	245 11 1 8	86 7 1 18	38 17 3 24	402	260¼	1 1 1 2	20 15 0 20	166½	..

TABLE XIII.

Articles made up in the Workroom of each Institution during the past Twelve Months.

Articles.	Number.			Total.
	Goodna.	Toowoomba.	Ipswich.	
Aprons, assorted	186	45	40	271
Bags, assorted	112	95	2	209
Bibs	..	78	..	78
Blazers	..	64	12	76
Blinds	22	4	11	37
Bloomers	12	..	..	12
Braces, dungaree	..	..	24	24
Coats	4	19	2	25
Combinations	1,876	514	107	2,497
Covers, assorted	11	23	9	43
Curtains	32	29	7	68
Cushion cases	5	..	..	5
Cushion covers	54	94	2	150
Cushions	..	6	..	6
Drawers	73	127	192	392
Dresses	1,760	896	718	2,374
Gowns, night	618	1,140	196	1,954
Gowns, surgical, &c.	70	2	27	99
Hats	..	14	..	14
Jackets, assorted	251	492	39	782
Jumpers, boys'	2	..	..	2
Mattress protectors	..	328	..	328
Mosquito nets	219	35	88	342
Overalls	..	43	12	55
Petticoats	281	301	373	955
Pillow cases	352	96	247	695
Pillow shams	48	..	..	48
Pillow slips	2,443	747	1,008	4,198
Pudding cloths	..	..	12	12
Pyjama coats	113	58	166	337
Pyjama trousers	95	71	109	275
Quilts	89	33	105	227
Serviettes	54	14	..	68
Sheets, assorted	4,207	1,346	1,932	7,485
Shifts	279	66	193	538
Shirts, assorted	1,994	24	1,963	3,981
Shrouds	67	66	39	172
Stockings, pairs	3	..	..	3
Tablecloths, assorted	970	151	147	1,268
Tablerunners	48	..	..	48
Ticks	599	168	245	1,012
Towels, assorted	4,296	1,854	1,829	7,979
Tray cloths	..	12	..	12
Trousers	4	13	91	108
Vests	52	..	270	322
Repaired garments	..	4,343	..	4,343
Uniforms—				
Aprons	399	316	266	981
Belts	..	162	..	162
Caps	234	282	150	666
Collars	241	201	269	711
Dresses	364	350	216	930
Veils	12	..	..	12

TABLE XIV.

Expenditure Table.

Average number of Patients daily resident during Twelve Months:—
Goodna 1697; Toowoomba 1119; Ipswich 513.

——	Goodna.			Toowoomba.			Ipswich.		
	£	*s.*	*d.*	£	*s.*	*d.*	£	*s.*	*d.*
Total expenditure	113,516	4	8	69,319	10	3	45,332	17	1
Maintenance collected by Curator	17,693	11	7	7,683	2	6	2,107	13	4
Sales	686	0	10	272	12	2	..		
Net expenditure	95,136	12	3	61,363	15	7	43,225	3	9
Gross cost per patient per annum	66	17	10	61	18	11	88	7	4
Net cost per patient per annum	56	1	3	54	16	9	84	5	2
Gross cost per patient per week	1	5	9	1	3	9	1	14	0
Net cost per patient per week	1	1	7	1	1	1	1	12	5

SCHIZOPHRENIA.

This mental disease, attacking as it does the promising youth of the community, presents a scourge that is probably greater than the combined effects of cancer and tuberculosis. The treatment of this condition has aroused worldwide interest, and the following tables give the results obtained by employing the most recent therapeutic methods.

A.—CARDIAZOL TREATMENT.

Following the method evolved by Dr. Ladislaus V. Meduna, of the Royal Hungarian Mental Hospital, Budapest, groups of 61 male patients and 35 female patients were treated. In order to arrive at some defined period for the duration of the psychosis, it was arbitrarily assumed to commence at the date of admission.

MALES.

Length of Residence.	Type of Psychoses.															
	Katatonic.				Hebephrenic.				Paranoid.				Simple.			
	No Change.	Slighlty Improved.	Improved.	Recovered.	No Change.	Slightly Improved.	Improved.	Recovered.	No Change.	Slightly Improved.	Improved.	Recovered.	No Change.	Slightly Improved.	Improved.	Recovered.
Under 6 months	1	2	1	..	..	1	2	1	..	..	..	..	1	..	1	..
6 months and under 12 months ..	..	2	1	..	..	2	1	2	1	2	..	..	..	..	..	1
1 year and under 2 years	2	1	2	2	1	2	1	..	1	2	..	..	..	1	..	..
2 years and under 3 years	5	1	1	..	1	..	1	..	1	..	..	..	..	..	1	..
3 years and under 4 years	..	3	..	..	2	..	..	..	1	..	..	..	..	..	..	..
4 years and over	2	1	..	..	2	..	..	..	2	..	..	..	..	..	..	..
Total	10	10	5	2	6	5	5	3	6	4	..	..	1	1	2	1

FEMALES.

Length of Residence.	Type of Psychoses.															
	Katatonic.				Hebephrenic.				Paranoid.				Simple.			
	No Change.	Slighlty Improved.	Improved.	Recovered.	No Change.	Slightly Improved.	Improved.	Recovered.	No Change.	Slightly Improved.	Improved.	Recovered.	No Change.	Slightly Improved.	Improved.	Recovered.
Under 6 months	..	1	1	2	..	..	..	1	..	..	..	..	..	..	..	..
6 months and under 12 months ..	..	2	..	2	..	1	..	2	..	..	..	1	..	..	..	..
1 year and under 2 years	..	1	..	1	..	1	..	1	..	..	..	..	..	..	..	..
2 years and under 3 years	..	1	1	..	..	..	..	..	1	..	..	..	..	..	..	..
3 years and under 4 years	..	1	..	..	1	3	1	..	..	..	..	..	..	..	..	..
4 years and over	4	..	1	..	3	1	..	..	..	..	..	..	..	..	..	..
Total	4	6	3	5	4	6	1	4	1	..	..	1	..	..	..	..

Technique.—It has been found that the most beneficial effects were produced by ensuring a reaction at each injection, and an additional dose or two doses were given where the first injection proved too small. Owing to the sclerosing effects of higher concentrations, a 10 per cent. solution of cardiazol was found the most practicable, although fairly large doses (*e.g.*, 12 c.c.'s) had to be administered to several patients.

The rapidity of the injection is very important, and it should not take longer than ten seconds.

In order to ensure the needle remaining in the vein, especially in female patients, special needles with short tapered points were used.

Patients were all treated in single rooms, and no trouble was found with the "fear-complex" that has caused concern elsewhere. A course of 20-23 injections appeared desirable.

Discussion.—Almost invariably patients who improved showed definite response after three or four injections.

The maximum response was shown in patients whose psychosis was of less than twelve months' duration and who were under thirty years of age.

"Slight improvement" means reduced preoccupation, improved habits, and ability to participate in occupational therapy.

"Improvement" means good readjustment to hospital life, with residual delusions, or occasional periods of excitement.

"Recovered" means discharged or on leave for some time; and reported as making satisfactory adjustment.

The group results emphasise the necessity of early treatment.

All patients treated showed a tendency to retrogression, but active and energetic occupational therapy checked this in the majority of cases.

Apart from the accepted classifications of schizophrenia, the cases treated fell into two distinct groups:—

1. Those who were "passively" co-operative.
2. Those who were "aggressively" introverted.

Group I included the greater number of recoveries.

B.—INSULIN TREATMENT.

Following the method of Dr. Manfred Sakel, of Vienna, modified by that of the Worcester State Hospital, Massachusetts, U.S.A., a small group of nine patients was treated.

This is a very promising method of treatment, and all the patients treated showed mental improvement (two complete recoveries) and remarkable physical improvement.

This treatment is lengthy and requires the undivided attention of a medical officer; so that until the medical staff is increased only two or three patients can receive treatment.

It is of interest to note that two of these patients were treated after making little response to cardiazol. The group is too small to be of statistical value, but its chief importance lies in that the technique of the treatment is being preserved.

SURGICAL TREATMENT.

During the year 122 surgical operations were performed requiring general anæsthetic.

MALARIA THERAPY.

For this treatment composite strains of benign tertian malaria were used from Callan Park Mental Hospital, New South Wales, and also from Mont Park Mental Hospital, Victoria. An injection of 3 c.c. of malarial blood was given intravenously in each case, and in each instance ten or twelve rigors were obtained in the course of treatment. In order to preserve the strain, other psychoses showing decidedly positive serological reactions were treated, making in all fifty-two patients. Small daily doses of quinine (5 gr.) were used to end the infection, and to reduce the tendency to develop immunity in case further treatment was necessary.

PSYCHOSES.

Result of Treatment.	Dementia. Paralytica.	Neuro-syphilis.	Other Psychoses.	Total.
Complete arrest	1	3	1	5
Incomplete arrest	9	18	7	34
Improved	1	8	1	10
Died during treatment	2	..	1	3
Total	13	29	10	52

PHYSICAL CONDITION.

—	Before Treatment.			After Treatment.		
	Good.	Bad.	Indifferent.	Good.	Bad.	Indifferent.
Dementia Paralytica	4	1	6	8	2	1
Neurosyphilis	20	1	6	25	..	2
Other Psychoses	7	3	4	13	1	..
Total	31	5	16	46	3	3

These tables definitely show remarkable improvement in the majority of cases treated, both mentally and physically; in fact, the physical improvement alone would more than prove the value of this form of treatment.

All patients showing decidedly positive Wassermann reactions were treated with organic arsenicals. Some patients developed exfoliative dermatitis, which responded readily to the exhibition of Vitamin C, which was administered as ascorbic acid or lemon juice. Latterly arsenical therapy has been preceded by a course of heavy metal treatment (bismuth), and it is felt that this increases the tolerance to organic arsenic.

Goodna.—At the commencement of the year there were 20 male and 1 female patients on the books of this hospital suffering from dementia paralytica. During the year 9 males and 1 female patients were admitted; 3 males died, and 2 males were discharged, leaving 24 males and 2 females remaining on the books as at the 30th June, 1938.

Toowoomba.—On the 1st July, 1937, there were 4 male patients on the books of the hospital suffering from dementia paralytica. There were no patients admitted or discharged throughout the year; 1 male patient died, leaving a total of 3 male patients on the books as at the 30th June, 1938.

Ipswich.—There were no patients suffering from dementia paralytica in the hospital at the commencement of the year; neither were any admitted throughout the year.

DENTAL TREATMENT OF PATIENTS.

Goodna.—During the past year Mr. W. G. Illingworth, the Visiting Dentist, has continued to carry out the dental treatment here. In all, 402 male and 220 female patients were attended in the dental rooms, whilst 503 inspections were made in the various wards, making a grand total of 1,125 patients. The number of teeth removed under local anæsthesia or general anæsthesia was 1,603. Prophylactic treatment was carried out for 94 patients; dentures eased numbered 7; repairs, 20; fitted, 5. Zinc oxide dressings were placed in 15 teeth and 3 amalgam fillings were completed.

During the year a special dental therapeutic effort was launched. General anæsthetics were administered in 38 selected cases. These were patients in whom oral sepsis was undoubtedly present. A monthly record of their physical weights and mental conditions was made. The increase in weight is truly astounding when one considers that no special diet was used. The mental condition of quite a few has improved, many patients being reported by the medical officers as now working and much brighter in their outlook.

The following table shows changes in weights of patients after having received dental treatment:—

No. of Patient	Weight Increase	No of Patient	Weight Increase
	Females. Lb.		Females—*continued.* Lb.
1	3½	21	23
2	12	22	17
3	5	23	4½
4	8½	24	6
5	8½	25	1
6	3	26	13
7	10½	27	11½
8	4	28	11
9	5		
10	6		Males.
11	6	1	Down but increasing.
12	3		
13	1½	2	2
14	Stationary	3	2
15	9	4	2
16	9½	5	14
17	14	6	Decrease of 11 lb.
18	5	7	21
19	2	8	12
20	Decrease of 5 lb. now increasing each month.	9	11
		10	11

Toowoomba.—The Visiting Dentist, Mr. J. E. B. McLean, L.D.Q., during the year examined 984 patients (541 males and 443 females) and performed 308 extractions from male patients and 313 extractions from female patients; in addition, 24 male and 23 female patients were given prophylactic treatment during the year.

Ipswich.—Mr. W. G. Illingworth, who was appointed as "visiting dentist," attends regularly each week; his professional work has been performed with care and skill to the benefit of the patients.

MAGISTERIAL INQUIRIES.

During the past twelve months there were five magisterial inquiries held at Goodna concerning the deaths of two female and one male patient who committed suicide and the sudden death of two male patients. Two inquiries were held at Toowoomba, both into cases of suicide, while at Ipswich there were no inquiries.

DEPORTEES.

There were no patients deported from any of the hospitals during the past twelve months.

BIRTHS.

Two births took place at Goodna during the twelve months ending on 30th June, 1938, both mothers having been admitted pregnant. Both births were male children.

No births took place at either Toowoomba or Ipswich.

ESCAPES.

Nine patients escaped—eight male and one female patient—from Goodna during the past twelve months, eight of whom were recaptured. One male patient, who was well on the road to recovery, has been written off the books of the hospital. Two male and one female patients escaped at Toowoomba, while two male patients escaped at Ipswich. All escapees from the two last-mentioned hospitals were recaptured.

RETURNED SOLDIERS.

(Red Cross Society.)

The above society for many years has given liberally and generously to the returned soldier patients, and these patients have fully appreciated these presents. As in former years, this society has forwarded regular fortnightly supplies of tobacco and cigarette papers for the returned soldier patients in each of the hospitals, and, in addition, sweets, fruit, and cake are forwarded at Christmas time.

PATIENTS' LIBRARY.

Most of the books contained in the libraries at the hospitals have been donated, and such gifts are very much appreciated by the patients. The library at Goodna, containing over 2,600 books, besides magazines and periodicals, is in charge of a patient, who issues books twice weekly.

RELIGIOUS SERVICES.

Goodna.—Church of England, Presbyterian, and Methodist services have been held regularly in the recreation hall for patients who have wished to avail themselves of the opportunity, provided their mental states and general good behaviour permitted them to attend. The Roman Catholic patients, where possible, attend their church in the Goodna township.

The clergy of the various religions pay periodic as well as special visits to the patients in the institution whenever required.

Toowoomba.—Religious services have been held regularly during the year, as was the practice in past years—namely, Church of England, Roman Catholic, and Presbyterian—each being held in the recreation hall once per month; in addition, the clergymen of the Toowoomba churches have been assiduous in visiting patients.

Ipswich.—Religious services, which have been regularly held through the past year as heretofore, comprise monthly Church of England, Roman Catholic, and Methodist services, while the Salvation Army holds a quarterly service. On Christmas Day the members of the Methodist Church distributed gifts of sweets, cakes, cigarettes, and tobacco to every patient, which were very much appreciated.

AMUSEMENTS.

Goodna.—For the benefit of the patients, dances are held during the winter months, and these are enjoyed to the utmost by those who participate in them. The dancing season, as in previous years, is concluded by a grand "finale" termed the Patients' Fancy Dress Ball. Talking pictures are screened fortnightly in the winter months, and this class of entertainment is received with enthusiasm by the patients who view them. The wireless sets provide a great deal of entertainment for the patients, as also do the concerts given by various visiting parties and the band concerts given frequently by the Salvation Army Band. Cricket and football, as in past years, have been played on the institution recreation ground; a very successful athletic sports day—as in past years—was held on New Year's Day, for which many Brisbane firms kindly supplied prizes.

Toowoomba.—During the year "talkies" have been given weekly during the summer and fortnightly during the winter, and the high standard of performance has been maintained; they are indeed appreciated by the patients. Dances for the patients have been held each week during the year, and the more formal ones in winter, followed by supper, are particularly enjoyed by the patients. Concerts have been given by various parties of visiting artists and have always attracted full houses. Band concerts have been frequently given by the Salvation Army Band and the City Band during the year and always appeal. The wireless sets provide a great deal of entertainment for the patients. The patients have enjoyed watching numerous football, cricket, and tennis matches during the year. The patients' annual sports was an extraordinary success this year, and a record number of patients (over 600) attended, many of whom took an active part. The patients' annual fancy dress ball was held as usual and was a most enjoyable and spectacular function.

Ipswich.—Indoor entertainments have been supplied to the patients as heretofore in the form of weekly dances, except in the summer months, and numerous concerts kindly given by local artists. As last year, the staff of this hospital organised a patients' fancy dress ball, which was most successful. In November the returned soldier patients were invited to an Armistice dinner arranged by the returned soldiers on the staff. In February the staff organised a very successful sports gathering for the patients; some creditable performances were recorded, and keen rivalry and good sportsmanship was always evident. Appreciation is felt for the assistance provided by numerous local residents and visiting concert parties during the year. On Anzac Day the 1st Cavalry Band visited the hospital and played a programme of music which was greatly appreciated by the returned soldier patients. A "talking picture" programme is provided for the patients each week and is greatly appreciated. In addition to the usual weekly dance, the patients have a practice dance night, when non-dancers are encouraged to dance, and community singing is indulged in by the patients and staff.

OFFICIAL VISITORS.

Mr. R. Curtis and Mr. F. G. Connolly, P.M, continued to act as official visitors to the Goodna and Ipswich Hospitals during the past twelve months, while Dr G. V. Hickey and Mr. J. Landy, P.M., acted in a similar capacity at Toowoomba.

CHIROPODISTS.

During the past year Messrs. B. Shay and E. J. Woolsey have visited the Goodna Hospital and have carried out their treatment to the patients as honorary chiropodists. Such work has also been done by Mr. Shay and Mr. Woolsey at the Toowoomba and Ipswich Hospitals respectively.

HONORARY VISITING STAFF—TOOWOOMBA.

Dr. V. R. Woodhill, M.R.C.P., Honorary Consulting Physician, was called in consultation on three occasions, and on each occasion saw several patients.

Dr. A. W. L. Row, F.R.C.S., Honorary Consulting Surgeon, was called in consultation on five occasions, and on each occasion saw several patients.

To both of them we are deeply indebted for help freely given.

To the Brisbane and South Coast Hospitals Board our thanks are due for radium treatment for various patients.

OCCUPATIONAL THERAPY.

The sewing room (females) and the workshop (males) have been centres of activity since their inauguration, and many of the patients who have performed various types of handy arts and crafts during the year have shown marked improvement in their outlook on life as a result of this occupational treatment.

PATHOLOGICAL LABORATORY.

An epoch in the advanced treatment of mental disease was the decision of the Director-General of Health and Medical Services to establish a pathological laboratory at Goodna. Through the year the services of Dr. D. W. Johnson have been available, and it is hoped that when the laboratory is completed and equipped a permanent technician will be appointed. It is felt that the best clinical work cannot be dissociated from pathology, and that the establishment of the laboratory will inaugurate an era of physchiatric research.

APPOINTMENTS.

During the year, on the recommendation of the Director-General, Dr. B. F. R. Stafford attended the International Congress of Mental Hygiene at Paris as the Australian delegate, and visited America, England, and other parts of Europe. He was appointed Medical Superintendent at Goodna on his return. The Government made a forward move in seconding this officer to study administrative and clinical psychiatry abroad, and it is hoped that their breadth of vision will be well repaid.

Dr. W. P. H. Parker was appointed Medical Superintendent at Ipswich; Dr. P. F. V. Crowe, Senior Assistant Medical Superintendent at Goodna; and Dr. S. L. Cook, Second Assistant Medical Superintendent at Goodna.

Head Attendant W. Kennedy was promoted to be Chief Attendant at Willowburn.

Appreciation is expressed through the General Medical Superintendent to the Brisbane and South Coast Hospitals Board for their courtesy in permitting two medical officers from Goodna to attend the out-patient eye clinics. The clinicians at the Brisbane Hospital have given every possible assistance, and the medical officers concerned feel better equipped to deal with the numerous ophthalmic and neurological conditions found in this hospital.

It is hoped this co-operative measure may be extended similarly to other clinical specialities, particularly that of dermatology, in the near future.

ACCOMMODATION AND BUILDINGS.

A number of the wards in the mental hospitals require internal painting.

Overcrowding on the female side at Goodna and in the children's ward at Ipswich is still acute. This will be relieved if the plans to erect a new ward at Goodna and enlarge the children's ward at Ipswich mature. It must be emphasised that these proposals will not meet the situation completely, as female ward 4 at Goodna and an ancient block of six cells must be demolished.

The recommendations for the construction of a separate male unit for chronic male patients requiring a minimum of supervision, and for enlarging the available female accommodation by using male wards, 1, 2, and 3, should be seriously considered.

It is hoped that an early start will be made on the proposed nurses' home at Ipswich, as the accommodation for the nurses there is not satisfactory.

The ancillary services at mental hospitals should be as nearly ideal as possible, and to this end the accommodation for artisans at the hospitals requires improvement.

At Ipswich the advisability of providing more up-to-date piggeries, cowsheds, and stables, and in more favourable sites, is again under consideration.

TOWNSVILLE RECEPTION HOUSE.

—	M.	F.	T.	Males.	Females.	Total.
On books on 1st July, 1937				5	4	9
Admitted and readmitted during the twelve months				63	31	94
Total on books and under treatment during twelve months				68	35	103
Discharged recovered ..	17	7	24			
Transferred to Goodna ..	47	27	74			
Died						
Total discharged, transferred, and died..				64	34	98
Remaining on books on 30th June, 1938 ..				4	1	5
Average number daily resident during the twelve months				4	3	7

The following table shows the admissions, including readmissions, into the Townsville Reception House, for each of the past twenty-nine and a -half years:—

Year.	Males.	Females.	Total.
1909	62	19	81
1910	60	14	74
1911	66	24	90
1912	75	19	94
1913	78	26	104
1914	79	23	102
1915	59	26	85
1916	87	19	106
1917	83	26	109
1918	55	20	75
1919	74	19	93
1920	72	17	89
1921	59	26	85
1922	60	33	93
1923	59	30	89
1924	73	24	97
1925	79	23	102
1926–27*	120	21	141
1927–28	65	18	83
1928–29	55	16	71
1929–30	53	27	80
1930–31	52	18	70
1931–32	56	23	79
1932–33	38	19	57
1933–34	52	26	78
1934–35	50	21	71
1935–36	36	20	56
1936–37	44	19	63
1937–38	63	31	94
Total for past 29½ years	1,864	647	2,511

* This period is for 18 months.

The following table gives the numbers of patients that have been transferred each year for the past twenty-nine and a-half years from this reception house to Goodna Mental Hospital, together with the total numbers of transfers for the whole period:—

Year.	Males.	Females.	Total.
1909	58	14	72
1910	50	11	61
1911	50	19	69
1912	58	14	72
1913	62	23	85
1914	62	14	76
1915	45	19	64
1916 . ..	71	15	86
1917	58	24	82
1918	43	18	61
1919	49	14	63
1920	44	11	55
1921	50	25	75
1922	52	27	79
1923	43	21	64
1924	64	21	85
1925	64	18	82
1926–27*	94	16	110
1927–28	39	13	52
1928–29	41	15	56
1929–30	34	23	57
1930–31	41	13	54
1931–32	49	11	60
1932–33	30	11	41
1933–34	33	22	55
1934–35	48	17	65
1935–36	24	17	41
1936–37	33	9	42
1937–38	47	27	74
Total for past 29½ years	1,436	502	1,938

* This period is for 18 months.

DEATHS.

There were no deaths in the reception house during the past twelve months.

ESCAPES AND ACCIDENTS.

One patient escaped during the past twelve months.

No serious accident or injury happened to any patient in the reception house during the past twelve months.

EXPENDITURE TABLE.

(*Average number daily resident during the twelve months*, 7.)

	£	s.	d.
Total expenditure	2,078	7	7
Maintenance collected by Curator ..	5	0	0
Net expenditure	2,073	7	7
Gross cost per patient for twelve months	296	18	3
Net cost per patient for twelve months	296	3	11
Gross cost per patient per week ..	5	14	2
Net cost per patient per week ..	5	13	11

EPILEPTIC HOME, ROCKVILLE, WILLOWBURN.

During the year under review the accommodation was increased by the provision of twelve extra bedsteads for the sleep-out verandas, and the necessary mattresses and bed linen were made up in the male patients' occupation room.

The existing small sports ground has been found to be too small for the requirements of the patients in the home, and, owing to its nearness to the buildings, windows and tiles are sometimes broken by cricket and foot balls, resulting in unnecessarily increased maintenance costs to the Public Works Department. Application has therefore been made for the purchase of an additional piece of land to be used as a recreation reserve where field sports could be indulged in, and which would also be available as a physical training centre and playground for the school children.

The benefit to the younger patients of the school established during the previous year is now more apparent. The lessons are aimed at producing self-reliance and initiative in the scholars, and there is a noticeable improvement in the school work and general behaviour of the twenty pupils. Keen interest is taken by the more forward pupils in pastel drawing, plasticine modelling, sewing, knitting, singing, dramatising, physical exercises, and organised games, of which cricket appears to be the most popular. Favourable progress has been made with basket-weaving, and several articles have been made by some of the boys without assistance. The backward pupils are occupied with kindergarten lessons, such as sewing cards, mat-weaving, and bead-threading.

Several pupils have joined an international correspondence club, and interesting letters have been received by them from the United States of America, Canada, Hawaii, and Africa. The routes followed by these letters are explained to the class by the teacher, and pointed out on the maps with a brief description of the places *en route*. These travel talks create a great deal of interest amongst the pupils, with a resultant widening of their outlook.

A portion of the garden has been allotted to the school boys, where vegetables and flowers have been grown with fair results.

A non-competitive exhibit, consisting mostly of school work, was entered in the Toowoomba show and created a great deal of interest.

OCCUPATION.

Indoor occupation is provided for the male patients in the occupation room and for the female patients in the sewing room, while outdoor occupation is found in the vegetable and flower gardens, poultry yards, and general repair work. In the male occupation room, boot-repairing, mattress-making, carpentering, painting, furniture polishing, &c., is undertaken, while in the sewing room large and varied numbers of articles of clothing are made up, and table and bed linen prepared.

ENTERTAINMENT.

Entertainments are held in the dining-room on the female side, where dancing and games are indulged in, and the concerts provided are much enjoyed. The patients also visit the mental hospital to attend the weekly pictures and other entertainments at that hospital. A plentiful supply of reading matter is supplied by the various church guilds and by relatives and friends of patients, in addition to the daily papers provided by the institution, while the wireless programmes are attentively heard and much appreciated.

Seventy patients attended the last Toowoomba show, and a number also visit Toowoomba during the Christmas festivities. The patients here are also invited to attend the annual sports at the mental hospital, which they enjoy very much; the children spend a most enjoyable day at the Rockville State School picnic; also at the picnic given them by the Royal Automobile Club of Queensland, which is usually held at the Geham State School, about 12 miles out in the country. The members of the Methodist Church Guild gives the patients a concert at Christmas time, after which tea is served by the ladies of the guild and each patient receives an appropriate gift.

RELIGIOUS SERVICES.

Religious services are held at the institution every Sunday, while the Roman Catholic patients attend divine service once every month at the mental hospital. The clergy of the various denominations visit the sick patients as occasion requires, and a sacred concert was rendered by the Church of England at Easter.

OFFICIAL VISITORS.

The institution has been visited regularly by the Inspector of Asylums and by the Official Visitor, Mr. J. E. Landy, Police Magistrate.

Tables showing the admissions, readmissions, discharges, and deaths; ages of patients admitted and readmitted; conjugal condition of patients admitted and readmitted; districts from which patients were admitted and readmitted; causes of death of patients during the twelve months ending on 30th June, 1938, together with a table showing admissions, readmissions, discharges, deaths, &c., during the past seventeen years, are appended: —

ADMISSIONS, READMISSIONS, DISCHARGES, AND DEATHS, FOR THE TWELVE MONTHS ENDING 30TH JUNE, 1938.

—	Males.	Females.	Total.	Males.	Females.	Total.
On books of Epileptic Home on 1st July, 1937				35	48	83
On leave from Epileptic Home on 1st July, 1937				6	6	12
In residence on 1st July, 1937				29	42	71
Admitted for first time during twelve months	4	8	12			
Readmitted during the twelve months	..	..	..			
Admitted and readmitted during the twelve months				4	8	12
Total number under treatment during the year				39	56	95
Discharged, and died during the year—						
Discharged—	Males.	Females.	Total.			
Recovered	..	..	..			
Relieved	2	2	4			
Not improved	2	8	10			
Died	..	3	3			
Total discharged and died during the year				4	13	17
Remaining on books of Epileptic Home, 30th June, 1938				35	43	78
On leave on 30th June, 1938				3	1	4
In residence on 30th June, 1938				32	42	74

AGES OF PATIENTS ADMITTED AND READMITTED DURING THE YEAR ENDED 30TH JUNE, 1938.

—	Males.	Females.	Total.
5 years and under 10 years	1	..	1
10 years and under 15 years	..	3	3
15 years and under 20 years	..	1	1
20 years and under 25 years	..	1	1
25 years and under 30 years	3	..	3
30 years and under 35 years	..	2	2
35 years and under 65 years	..	..	..
65 years and under 70 years	..	1	1
Totals	4	8	12

CONJUGAL CONDITION OF PATIENTS ADMITTED AND READMITTED DURING THE YEAR ENDED 30TH JUNE, 1938.

—	Males.	Females.	Total.
Married	..	..	..
Single	4	7	11
Widowed	..	1	1
Divorced	..	..	..
Totals	4	8	12

DISTRICTS FROM WHICH PATIENTS WERE ADMITTED AND READMITTED DURING THE YEAR ENDED 30TH JUNE, 1938.

—	Males.	Females.	Total.
Toowoomba	..	..	..
North and North-western Districts	1	2	3
Central and Central-western Districts	1	..	1
South and South-western Districts	2	6	8
Totals	4	8	12

CAUSES OF DEATHS THAT HAVE OCCURRED DURING THE YEAR ENDED 30TH JUNE, 1938.

—	Males.	Females.	Total.
Gastric ulcer	..	1	1
Arteriosclerosis	..	1	1
Epilepsy	..	1	1
Totals	..	3	3

NUMBER OF EPILEPTIC FITS THAT HAVE OCCURRED DURING THE YEAR ENDED 30TH JUNE, 1938.

Males	2,732
Females	2,679
Totals	5,411

EPILEPTIC HOME, WILLOWBURN.

Year from 1st July to 30th June.	On Books.			On Leave.			In Residence.			Admitted and Re-admitted.			Total under Treatment.			Discharged.			Died.			Transferred to Willowburn Mental Hospital.			Transferred to General Hospital.			On Books.			On Leave.			In Residence.		
	1st July.			1st July.			1st July.			During twelve months from 1st July to 30th June.																		30th June.			30th June.			30th June.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
1918-19	..	..	..	..	..	..	..	..	..	19	33	52	19	33	52	3	..	3	..	..	..	..	..	..	..	..	..	16	33	49	..	..	..	16	33	49
1919-20	16	33	49	..	..	..	16	33	49	24	15	39	40	48	88	21	13	34	1	5	6	..	..	..	..	..	..	18	30	48	..	..	..	18	30	48
1920-21	18	30	48	..	..	..	18	30	48	8	10	18	26	40	66	4	3	7	2	..	2	..	..	..	..	..	..	20	37	57	..	..	..	20	37	57
1921-22	20	37	57	..	..	..	20	37	57	12	10	22	32	47	79	6	5	11	..	2	2	..	..	..	..	..	..	26	40	66	..	..	..	26	40	66
1922-23	26	40	66	..	..	..	26	40	66	12	7	19	38	47	85	9	4	13	2	..	2	..	..	..	..	..	..	27	43	70	..	..	..	27	43	70
1923-24	27	43	70	..	..	..	27	43	70	9	10	19	36	53	89	5	1	6	2	2	4	..	..	..	..	..	..	29	50	79	..	..	..	29	50	79
1924-25	29	50	79	..	..	..	29	50	79	5	9	14	34	59	93	1	4	5	..	1	1	8	6	14	..	..	..	25	48	73	..	..	..	25	48	73
1925-26	25	48	73	..	..	..	25	48	73	13	9	22	38	57	95	2	6	8	2	1	3	2	..	2	..	..	..	32	50	82	..	..	..	32	50	82
1926-27	32	50	82	..	..	..	32	50	82	9	5	14	41	55	96	9	5	14	..	1	1	3	6	9	..	..	..	29	43	72	..	..	..	29	43	73
1927-28	29	43	72	..	..	..	29	43	72	7	5	12	36	48	84	6	1	7	1	1	2	1	..	1	1	1	2	27	45	72	..	..	..	27	45	72
1928-29	27	45	72	..	..	..	27	45	72	12	6	18	39	51	90	3	2	5	1	1	2	5	7	12	..	..	..	30	41	71	..	..	..	30	41	71
1929-30	30	41	71	..	..	..	30	41	71	4	5	9	34	46	80	2	4	6	3	1	4	2	8	10	..	..	..	27	33	60	..	1	1	27	32	59
1930-31	27	33	60	..	1	1	27	32	59	8	13	21	35	46	81	4	4	8	1	1	2	..	1	1	..	..	..	30	40	70	..	1	1	30	39	69
1931-32	30	40	70	..	1	1	30	39	69	9	13	22	39	53	92	5	6	11	1	..	1	4	5	9	..	..	..	29	42	71	..	1	1	29	41	70
1932-33	29	42	71	..	1	1	29	41	70	9	7	16	38	49	87	2	5	7	1	..	1	6	5	11	..	..	..	29	39	68	1	2	3	28	37	65
1933-34	29	39	68	1	2	3	28	37	65	6	12	18	35	51	86	4	1	5	1	1	2	4	2	6	..	..	..	26	47	73	2	3	5	24	44	68
1934-35	26	47	73	2	3	5	24	44	68	9	11	20	35	58	93	3	3	6	1	2	3	1	6	7	..	..	..	30	47	77	2	2	4	28	45	73
1935-36	31	47	78	2	2	4	29	45	74	8	11	19	39	58	97	4	6	10	1	..	1	5	6	11	..	..	..	29	46	75	2	3	5	27	43	70
1936-37	29	46	75	2	3	5	27	43	70	8	6	14	37	52	89	2	2	4	..	2	2	1	1	2	..	..	..	35	48	83	6	6	12	29	42	71
1937-38	35	48	83	6	6	12	29	42	71	4	8	12	39	56	95	4	10	14	..	3	3	1	4	5	..	..	..	35	43	78	3	1	4	32	42	74

Additional Staff.

The Medical Superintendents have reported inadequate staffs, especially the female nursing staff. The desire is expressed that provision will be made for the necessary increased personnel in the ensuing year, and that this increase will include medical officers and occupational therapists.

Owing to the difficulty of obtaining medical officers, progress in medical treatment and the care of patients is necessarily handicapped.

During the year a number of *locum tenentes* have had to be employed, and, although these gave satisfactory service during their terms of employment, the practice of engaging temporary assistance is most unsatisfactory.

The difficulty of obtaining suitable candidates when vacancies occur is due to the fact that the salaries offered for the positions are below those available in other branches of medical work here.

I desire to express my appreciation of the able assistance afforded me during the year and in the compiling of this report, by Dr. B. F. R. Stafford, Medical Superintendent, Goodna; Dr. J. E. Fancourt McDonald, Medical Superintendent, Willowburn; Dr. W. P. H. Parker, Medical Superintendent, Ipswich; and also to the medical officers and staff for their assistance and co-operation.

I also acknowledge the assistance given during the past year by the Department of Public Works, the Police Department, and other Government Departments.

I have the honour to be,
Yours obediently,

JOHN COFFEY,
Inspector of Asylums.

School Exhibit of the Epileptic Home, Willowburn, at the Toowoomba Show, 1938.

(School opened in April, 1937. Teacher—Miss Dorothy King—transferred from Rockville State School.)

ANNUAL REPORT

OF THE

GOVERNMENT ANALYST
AND CHIEF INSPECTOR OF EXPLOSIVES

(FRANK E. CONNAH, F.I.C., A.A.C.I.)

TO

30th JUNE, 1938.

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Report by Government Analyst and Chief Inspector of Explosives for the Year ended 30th June, 1938.

To the Director-General of Health and Medical Services, Brisbane.

SIR,—I have the honour to submit the following report on the work of the Government Chemical Laboratory for the year ending 30th June, 1938, including a report conforming to section 24 of "*The Health Act of* 1937."

The work of the Laboratory covers such matters as are referred by all Departments of the Public Service except the Department of Agriculture and Stock, which has its own laboratory and staff. It covers the examination and chemical analysis of a variety of substances submitted as samples or exhibits, and also such advice as may be given to the Departments by a consulting chemist. The Government Analyst is also Chief Inspector of Explosives, and two analysts are Inspectors of Explosives.

The analytical work and chemical consulting work of the Federal Customs for this State is performed by the staff of this Laboratory, and reports are issued to the Collector of Customs.

After eight consecutive record years for number of samples reported, during which time the figures were more than doubled, the total figures, at 14,447 samples reported, are a little below those of the previous year. The past three years have shown:—

1935–1936	13,656
1936–1937	15,421
1937–1938	14,447

The number of determinations made, of course, far exceeds the number of samples reported.

The following summary (Table I.) shows the work done for various Departments:—

TABLE I.

Department.	Number of Samples.
Health	7,193
Customs (Commonwealth)	2,179
Geological Survey Office	1,266
Main Roads Commission	859
Mines	105
Police	382
Portmaster	1,026
Railway	166
State Stores	206
Other Departments and Public	1,065
	14,447

HEALTH DEPARTMENT.

The number of samples examined was 7,193—a decrease of 989 on the record number (8,182) examined last year. As practically all the crayons on the market had been subjected to examination, there was a decrease of 802 in the number of crayon samples submitted. The lesser incidence of spray residues on fruit from Southern States accounted for a reduction of 574 in the number of fresh fruit samples.

TABLE II.—SUMMARY OF SAMPLES.

Nature of Samples.	Number of Samples.	Passed.	Rejected.
Beverages and cordials	151	52	99
Bread	20	17	3
Cake	12	11	1
Calamine lotion	6	..	6
Camphorated oil	7	5	2
Cereal products	45	43	2
Cheese	10	7	3
Condiments	7	7	..
Confectionery	22	14	8
Crayons	236	182	54
Disinfectant	10	6	4
Drugs and medicines	83	66	17
Dyes	5	1	4
Essences	17	11	6
Eucalyptus oil	11	10	1
Fish (tinned)	16	6	10
Fish (not tinned)	4	4	..
Fruit (fresh)	208	16	192
Fruit salad	10	10	..
Headache preparations	35	8	27
Jam and honey	7	6	1
Jelly	28	8	20
Junket preparations	7	7	..
Insecticides	10	7	3
Iodine (tincture of)	7	3	4
Meat and vegetables (tinned)	10	1	9
Minced meat and sausages	10	2	8
Vegetables (fresh)	16	11	5
Milk (fresh)	3,368	2,856	512
Milk products	12	12	..
Paint	102	27	75
Soap	7	2	5
Spirituous liquors	73	65	8
Tobacco	2,178	2,178	..
Toilet preparations	70	31	39
Toys	27	20	7
White precipitate ointment	6	6	..
Zinc ointment	6	6	..
Miscellaneous	91	72	19
	6,950	5,796	1,154
Pathological specimens	108	90 (Normal)	18 (Abnormal)
Water, and sewage effluents	135	..	..
	7,193	..	..

TABLE III.—PARTICULARS OF LEGAL SAMPLES OF MILK.

Place.	Number.	Passed.	Below the standard in Fat.	Below the standard in Total Solids and/or Solids not Fat.	Watered.
Greater Brisbane Area	2,345	2,021	58	215	51
Beaudesert	64	32	2	30	..
Bowen	14	11	..	1	2
Bundaberg	15	14	1	..	..
Cairns	21	18	..	1	2
Caloundra	29	26	..	..	3
Ipswich	130	122	2	6	..
Mackay	81	64	5	11	1
Maryborough	14	13	..	1	..
Nambour	16	16	..	..	..
Roma	24	23	..	1	..
Rockhampton	135	111	6	11	7
South Coast	166	144	1	12	9
Toowoomba	84	79	4	..	1
Townsville	42	27	2	9	4
Other places (10)	51	41	2	3	5
	3,231	2,762	83	301	85

TABLE IV.—SUMMARY OF TABLE III.

—	Percentage of Total Samples.
Adulterated with water	2·6
Free of added water but deficient in fat	2·6
Below the standard in total solids and/or solids not fat	9·3
Passed the standard	85·5
	100·0

TABLE V.—MILK POSITION COMPARED WITH THE FOUR PREVIOUS YEARS.

Year.	Number of Legal Samples.	Deficient in Fat.	Watered Samples.	Average percentage of Added Water.
		Per cent.	Per cent.	
1933–1934	2,250	5·4	3·1	8
1934–1935	2,506	7·8	3·4	8
1935–1936	3,327	8·8	2·7	11
1936–1937	2,845	6·9	2·8	12
1937–1938	3,231	2·6	2·6	10

The proportion of milks—2·6 per cent.—deficient in fat was much lower than it has been for many years. The number of naturally poor milks—9·3 per cent. of the total—below the standard in total solids and/or solids not fat was still unduly high.

The position in regard to watered milk is stationary.

The imposition of fine laid down in the Health Act for this form of adulteration is £1 for each per cent. of added water. Addition of water to milk is a form of fraud that is just as difficult to completely eliminate as any other form.

Milk Control.—The scientific control of the quality of milk has been efficiently developed.

The freezing-point determination protects against addition of water; the modified methylene blue test affords highly useful and rapid criterion of the bacterial condition; the ''Minit'' apparatus measures visible dirt. Since 1935 the analyst has been indebted to those capable investigators, Professor Kay and W. R. Graham (junior), of the National Institute for Research in Dairying, Reading, England, for the phosphatase test that infallibly determines the application of safe pasteurisation temperature.

Prior to introduction of this test the existent tests distinguished only milk heated at or above 172 deg. F.

The phosphatase test distinguishes milk pasteurised at 142 deg. F.—the minimum temperature prescribed under the Queensland Food and Drug Regulations.

Beverages and Cordials (136 samples).—

Deficient in fruit juice	23
Contained excess of preservative	16
Preservative not declared	5
Artificial colour not declared	9
Misdescribed	31
Maker's name not declared	5
Passed	47

Under the Queensland Food and Drug Regulations provision is made for flavoured cordials and beverages which shall be flavoured with genuine fruit essence, and also for imitation cordials and beverages which may contain artificial fruit essence.

Fortunately, both imitation cordials and beverages have almost disappeared from the market, and the essence-flavoured cordials and beverages are following.

It is desirable that any cordial or beverage purporting to represent fruit should contain a specified proportion of actual fruit juice.

Coal Tar Dyes in Beverages and Cordials.—It cannot be accepted that any coal tar dye in the quantity found in some beverages is entirely harmless to the human organism.

For efficiency, the use of even the permitted coal tar colourings should be limited as far as possible.

The minimum amount to sufficiently enhance the appearance of various cordials and beverages for trade purposes may be determined, and it is suggested no more than that amount should be permitted.

The same fruit beverages contained coal tar dye ranging from $\frac{1}{2}$ grain to 4 grains to the pint. If the former was sufficient, the latter amount must surely be regarded as excessive.

Soda Water from Soda Fountains (15 samples).—

Lead in 9 samples $\frac{1}{77}$th to $\frac{1}{5}$th grain per gallon.
Lead in 4 samples $\frac{1}{1000}$th to $\frac{1}{166}$th grain per gallon.
Copper (in addition to lead) $\frac{1}{190}$th to $\frac{1}{5}$th grain per gallon in the thirteen samples.

One sample contained zinc at the rate of 4 grains to the gallon. It was reported to have caused sickness and vomiting in children and adults. Zinc is a toxic metal.

Soda water contaminated with copper in the proportion shown may not be deleterious to the human organism.

Lead, however, is probably the most insidious of the metallic poisons. In referring to it, Dr. G. Roche Lynch, of the Home Office, London, wrote: "It was not so much a question of the quantity absorbed from an individual food as of the taking of small amounts of lead from a variety of sources which, when added together, made a serious total. It was the absolute duty of those responsible for the purity of food to see that not more than the minimum of this poisonous metal reach the consumer."

Fresh Fruit (188 samples).—There was a needed improvement in the condition of fresh fruit arriving here from Southern States in relation to spray residues. Last year 686 samples were condemned because of excessive lead content, whereas this year only 182 samples contained more than the tolerance for lead—one-hundredth of a grain to the lb. The condition, however, can be still further improved.

Cereal Breakfast Foods (9 samples).—

TABLE VI.—COMPOSITION.

——		1.	2.	3.	4.	5.	6.	7.	8.	9.
Moisture	%	10·6	8·7	11·5	8·8	8·8	10·8	6·1	5·2	5·5
Protein	%	9·6	14·3	10·4	10·4	10·7	11·8	11·4	6·8	6·3
Ether extract (fat) ..	%	1·4	5·4	1·3	2·5	9·8	2·3	2·6	1·5	1·1
Carbohydrates ..	%	77·5	67·8	76·0	74·6	67·1	71·4	75·5	82·7	83·8
Crude fibre	%	0·3	1·8	0·3	2·3	2·0	2·1	2·7	0·9	0·2
Ash	%	0·6	2·0	0·5	1·4	1·6	1·6	1·7	2·9	3·1
		100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0
Phytin	%	0·1	1·2	0·15	0·85	0·95	0·80	0·70	0·20	0·25
Water soluble material	%	5·3	7·8	5·7	7·8	5·5	11·0	29·4	23·4	31·4
Calcium (Ca)	%	0·014	0·028	0·014	0·028	0·05	0·028	0·035	0·007	0·014
Phosphorus (P) ..	%	0·075	0·36	0·09	0·26	0·33	0·24	0·22	0·08	0·1
Digestible Calories (per pound)	..	1,547	1,710	1,511	1,644	1,817	1,603	1,684	1,685	1,680

Nos. 1 and 3 were wheat products similar to white flour in composition and nutritive value.

No. 2 was a mixture of cereal meals and wheat germ. Such mixture is approved by nutritional authority

Nos. 4 and 6 were whole-wheat preparations.

No. 5 consisted of rolled oats equivalent to Scotch oats in food value.

No. 7 was a malted whole-wheat preparation high in soluble carbohydrates. It would also be a useful food.

No. 8 was cooked maizemeal with malt, honey and salt. It contained a high proportion of soluble carbohydrates, but was low in calcium, phosphorus, and phytin.

No. 9 was a rice product with malt, honey, and salt. It contained a high proportion of soluble carbohydrates, but was low in calcium, phosphorus, and phytin.

Calculation of "Digestible Calories."—In view of the continued use by certain writers, in computing human food values, of the Rubner factors—9·3 for fat and 4·1 for carbohydrates—it is deemed pertinent to point out that this Laboratory employs Atwater and Bryant figures —9 and 4 respectively—in calculation of digestible calories or physiological fuel values. The superiority of the Atwater and Bryant factors—which are used by Sherman—will be apparent in the fact that they were established in human physiological experiments; whereas the previously standard figures of Rubner were deduced from experiments with dogs.

Apparent Loss of Phytin in Breadmaking.—It has been stated by authority that "The quantity of phytin in vegetable foodstuffs is important because of the nutritive value of this substance. It supplies calcium and phosphorus in a readily assimilable form."

In using the phytin content as a factor in calculating the proportion of whole meal in bread, it was found that there was an apparent loss of phytin from flour to bread. Controlled baking tests afforded the following results:—

TABLE VII.

—	Whole meal.			Whole meal + 25% of Bran			Bran.
	Flour.	Dough.	Bread.	Flour.	Dough.	Bread.	
	%	%	%	%	%	%	%
Total phosphorus	0·35	0·35	0·36	0·60	0·60	0·63	1·34
Phytin phosphorus	0·33	0·30	0·26	0·62	0·54	0·42	1·50
Phytin	1·17	1·07	0·92	2·2	1·92	1·50	5·3

Apparent Loss of Phytin.

	Whole meal.	Whole meal + 25% of Bran.
	%	%
From flour to dough	8	13
From dough to bread	13	19
Total—flour to bread	21	32

As there was no loss in the total phosphorus, it would appear that, under the influence of fermentation and baking, portion of the phytin is so changed that it no longer registers as phytin.

White Flour.—Eight samples of white flour, representing probably the whole of the white flour on the Queensland market, afforded the following results:—

TABLE VIII.

—	Queensland Flour (six samples).	Average of Queensland Flours.	N.S.W. Flour average (two samples).
	% %	%	%
Moisture	10·5 –12·2	11·70	11·20
Protein	10·8 –13·3	12·20	11·00
Carbohydrates	72·3 –75·0	74·10	75·92
Ether extract (fat)	1·2 – 1·25	1·24	1·12
Crude fibre	0·15 – 0·2	0·18	0·18
Ash	0·5 – 0·7	0·58	0·58
	..	100·00	100·00
Wet gluten	31·5 –39·0	36·0	31·8
Dry gluten	11·4 –13·6	12·5	11·0
Calcium (Ca)	0·008– 0·014	0·013	0·014
Phosphorus (P)	0·083– 0·12	0·1	0·09
Nitrites (calc. as $NaNO_2$) parts per million	2·5 – 5·5	3·8	2·5

All the samples showed evidence of nitrogen peroxide bleaching.

Since flours containing 2·5 parts of nitrite per million are of sufficient whiteness, it would appear inadvisable to countenance presence of any higher amount.

Cake.—Nine samples of some of the low and medium-priced cakes were examined. Cakes of similar description did not differ markedly in quality or composition.

TABLE IX.—COMPOSITION.

—		Madeira (three samples).	Sponge Sandwich (three samples).	Sultana (three samples).
Water	%	19·1	23·7	18·7
Protein	%	6·4	7·4	6·4
Ether extract (fat)	%	18·8	7·4	18·5
Carbohydrates	%	54·5	60·6	55·2
Ash	%	1·2	0·9	1·2
		100·0	100·0	100·0
Coal tar dye		Present.	Present in one sample.	Present.
Sultanas per pound (oz.)	%	..	..	2·0 to 2·2
Calcium (Ca)	%	0·034	0·027	0·035
Phosphorus (P)	%	0·012	0·016	0·015
"Digestible calories" per pound		1,880	1,536	1,873
Price per pound (pence)		8·5 to 11·5	10 to 13	9·2 to 11

They were free of preservative and metallic contamination.

The fat present consisted of margarine only.

To substitute margarine with butter in the cakes containing 19 per cent. of fat would increase their cost by about 1½d. per pound.

The question of compelling addition of butter to all cakes to the extent of not less than 50 per cent. of the fat present might be considered.

This addition would increase the cost of the cakes containing a high proportion of fat (20 per cent.) by about one halfpenny per pound.

Sweet Potatoes.—The great majority of people have prepossessions in relation to food which do not appear compatible with nutritional teaching. The popularity of white bread is an instance of this, and it has been noted that the yellow variety of sweet potato is disapproved by many.

But this variety is of good flavour and has been found to contain up to 16,000 international units of Vitamin A per pound—that is about equivalent to the Vitamin A value of 12 oz. of good fresh butter—whereas the popular white variety, while possessing good dietetic qualities, is deficient in Vitamin A.

TABLE X.

Composition of Sweet Potatoes and "English" Potatoes.
(Local market samples.)

—		Sweet Potatoes.		"English" Potatoes (Carmen).	
		Yellow Variety.	White Variety.	Stanthorpe.	Forest Hill.
Water	%	68·0	77·0	78·6	77·0
Protein	%	1·3	1·3	1·8	1·7
Ether extract (fat)	%	0·3	0·2	0·2	0·2
Cane sugar	%	2·8	1·2	0·3	0·3
Invert sugar	%	0·5	2·8	Nil	0·4
Crude fibre	%	0·9	0·7	0·5	0·6
Starch	%	25·1	16·0	17·6	18·8
Ash	%	1·1	0·8	1·0	1·0
		100·0	100·0	100·0	100·0
Phytin	%	0·13	0·13	0·1	0·18
Calcium (Ca)	%	0·026	0·013	0·0043	0·01
Phosphorus (P)	%	0·04	0·04	0·04	0·057
"Digestible calories" per pound		550	390	366	360

Further work is necessary before accepting, as usual for sweet potatoes, the higher water content of the white variety shown in the samples analysed.

DRUGS AND MEDICINES.

A.P.C. Powders (28 samples).—The British Pharmaceutical Codex composition for compound aspirin tablets is accepted by the Department of Health as the standard for A.P.C. powders.

According to this standard, A.P.C. powder should consist of—

Aspirin	53·8 per cent.
Phenacetin	38·5 per cent.
Caffeine	7·7 per cent.

Four of the twenty-eight samples examined conformed approximately with this standard.

Twenty-four of the samples had the following range in composition:—

Aspirin	37 to 68 per cent.
Phenacetin	20 to 42 per cent.
Caffeine	3 to 20 per cent.

The variations in weights of the powders in many of the packs indicated a crude method of measuring the powder.

Some of the variations are shown hereunder—

Vendor.	Weights of powders (grains)
A	8·2 to 12·2
B	9·3 to 13·9
C	9·4 to 16·8
D	10·2 to 14·5
E	10·6 to 16·1
F	10·9 to 16·2
G	12·2 to 16·7
H	13·6 to 19·4
I	16·4 to 24·1
J	18·0 to 20·0

Certain vendors seek a popularity for their powders through heroic doses.

It is necessary under the Queensland Food and Drug Regulations to declare in the label the weight of powder in the single dose.

Any person requiring more than 15 grains of A.P.C. powder to relieve a headache is obviously in need of medical attention.

Acetanilide in Headache Powder.—Acetanilide is a poison under the Queensland Poisons Regulations. Any package containing acetanilide must bear a label in which shall be written the word "Poison" and "Unfit for children under 16 years."

It is also included as a poison under the Poisons Regulations of Great Britain.

The *British Pharmaceutical Codex* states that some persons are exceedingly susceptible to acetanilide, and even small doses will lead in these cases to cyanosis and collapse.

It has been excluded from the British Pharmacopœia.

Eucalyptus Oil—Eleven samples of eucalyptus oil were examined, with the following results:—

Sp. Gr. at 60° F.	·912 to ·939
Cineole	66·3 to 86·8%
Optical rotation at 20° C.	−0·7 to +2·8

Only one sample failed to comply with the B.P. standard for eucalyptus oil, which prescribes the presence of not less than 70 per cent. of cineole.

Vitamins in Cosmetics.—In a world made vitamin-conscious by nutritional authorities and patent food and medicine vendors it might be expected that vitamins would ultimately be incorporated in cosmetics.

Samples of cosmetic creams said to contain about 20,000 units of Vitamin A to the pound of cream were examined.

The use of Vitamins A and D in cosmetic cream probably finds its origin in the beneficial effect of cod-liver oil on burns and other skin lesions. One authority writes:—"Whether the vitamin content in cod-liver oil has a natural affinity for the skin and the underlying tissues, it is difficult to say, but there is obviously some factor in cod-liver oil which is not present in such oily dressings as liquid paraffin. This something has the effect of much more rapid healing and the entire elimination of scar tissue." Obviously, the reference quoted is to cod-liver oil, and not to a cosmetic cream containing a small proportion of a cod-liver oil concentrate.

Hair Dyes.—Under section 124 (2) of "*The Health Act of* 1937," it is enacted that—

> "No person shall sell or pack for sale any preparation for the treatment of the hair or scalp which contains any paraphenylenediamine or any lead or compound of lead, and no person shall use in the treatment of the hair or scalp of any other person any such preparation."

In the *Lancet* (1927) (824), it is stated that "Hair dyes with a base of paraphenylenediamine are so noxious that nearly every European country, as also New York, forbids them."

Paraphenylenediamine is a poison included in the poisons list of Great Britain.

In Taylor's "Principles and Practice of Medical Jurisprudence" it is written: "So long, therefore, as people are willing to use this dye in quantity, elderly-looking people with suspiciously dark hair may occasionally be met with whose paroxysmal tachardia or indigestion, whose palpitation or liverishness, or whose symptoms of gastric influenza will disappear if they will stop dyeing their hair."

Ten samples of paraphenylenediamine dyes and twenty-one samples of hair dyes of the paraphenylenediamine group were examined during the year.

While there is a "sensitisation" test given in the label covering these toxic dyes to determine whether the subject is susceptible to their toxic action, such test cannot be accepted as being indicative of the reaction in all cases or at all times. A test prior to each application is advised.

The dyes intended for eyebrows and eyelashes should be carefully examined.

One preparation sold overseas has been reported as containing 6 per cent. of paraphenylenediamine.

To apply this to the eyebrows after plucking the hair is courting dermatitis, or worse.

For the sake of an artificial beauty, however, risk would be taken by even an informed public.

Itching Powder.—A powder recommended by the vendor for application to the skin of your friends consisted of powdered glass wool.

Such form of entertainment would be pernicious and probably harmful.

Crayons, Modelling Clay, and Toys.—

Crayons—

Free of lead and arsenic	178
Less than 0·2 per cent. lead	4
Over 0·2 per cent. lead	54
	236

Six toys consisted of an alloy of lead and antimony. Of twenty samples of modelling clay examined, only one contained lead, and that in small proportion.

Tobacco Leaf (2,169 samples).—

1 to 1·7 grains of lead arsenate to the pound	46
Less than 1 grain to the pound	896
Free of lead arsenate	1,227

All the samples were suitable for use in manufacture.

Manufactured Tobacco.—The lead arsenate in nine samples of manufactured tobacco ranged from $\frac{1}{25}$th to $\frac{1}{5}$th grain per pound.

Six samples contained the weight of tobacco declared, two were 10 per cent. over the declared weight, and one sample 10 per cent. below. Moisture content varied from 12·8 to 16 per cent., and ash from 7·8 to 10·7 per cent.

Paint (102 samples).—

Over 5 per cent. soluble lead	75
Less than 5 per cent. soluble lead	9
Free of lead	18

Under Section 127 (1) of "*The Health Act of* 1937" it is enacted that—

> "(1) No person shall use or put any paint containing more than 5 per cent. of soluble lead upon—
>
> (*a*) Any verandah wall, verandah palisade, verandah post, verandah floor, verandah rail, verandah door, verandah gate, verandah blind, or any steps, baluster, handrail, or lattice of any house or building whatsoever; or
>
> (*b*) Any fence or gate whatsoever; or
>
> (*c*) Any other exterior portion whatsoever of any house, hall, school, or other building to which portion children under the age of fourteen years have easy access.
>
> (2) No person shall use or put on the roof of any house or building paint containing any lead."

Textile Dermatitis.—A low-priced, heavily-dyed woollen guernsey that was said to have produced dermatitis on the chest and arms of a waterside worker was submitted. On examination it was found to "bleed" readily, particularly to reagent made to simulate perspiration.

The sensitiveness of the subject to the particular dye in the garment apparently illustrates a type of dermatitis to which relatively few persons are subject.

Pathological Specimens (108).—

Hair and nails	7	..	6 contained arsenic.
Sputum	2	..	1 contained silica.
Urine	94	..	11 contained lead.
Viscera	2	..	Free of poison.
Miscellaneous	3		

Miscellaneous (91 samples).—The miscellaneous samples included almonds, cake containers, cloudy ammonia, cheese waxes, chocolate wrappers, bait cards, beef-seasoning, borax, breath-purifier, cream puffs, dates, dust, formalin, glyrene, guernsey, grease remover, hydrometers, ice cube mixture, itch powder, junket tablets, malt extract, meat cubes, meat pies, metal scrapings, metal spoon, and prickly-pear products.

General.—I acknowledge the valuable assistance given in the preparation and writing of the above report by Mr. L. A. Meston, Senior Analyst, the senior of the two State Analysts in the Foods and Drugs section of the Laboratory.

Mr. Meston continued to serve during the year as a member of the State Nutritional Advisory Board.

Lead in Pathological Specimens.—In view of the wish expressed by medical men forwarding pathological specimens that lead should be determined by the dithizone method of separation instead of the bisulphite method in use, experiments were undertaken to establish routine.

A red colour is given by lead, and also by several other metals, including zinc, and it is necessary to avoid interference by these metals. Tank waters are often used for drinking purposes in Brisbane, and usually contain a little zinc. This metal is also present in some varieties of chemical glassware.

It was also recognised that, though the amount of lead in a specimen is very small, even in a positive case, interfering metals could be present in much larger amount.

The series of experiments showed that by using the zinc-free Pyrex glassware only, and adopting certain recently published methods of separation, the lead was satisfactorily determined without interference.

It is not recommended, however, that the amount of urine specimen should be reduced below half a litre. This amount should be readily procurable and allows more confidence than when small specimens are examined and a large factor used to give the lead content per litre.

The method will now be used when desired.

COMMONWEALTH CUSTOMS.

The samples submitted cover a wide range and are chiefly to assist the Collector in classification for duty purposes, or in connection with excise.

MINES DEPARTMENT AND QUEENSLAND GEOLOGICAL SURVEY.

TABLE XI.—SUMMARY OF WORK DONE.

Nature of Sample.	Number of Samples.	Purpose of Analysis.
Bore gases	18	Nature and whether petroliferous.
Coal and coke	13	Usual analysis.
Mine air, &c.	61	Gas analysis.
Ores	922	Gold and silver only.
Ores	122	Gold, silver, and other metals.
Ores	193	Metals other than gold and silver.
Shales, &c.	8	Oil yield, &c.
Miscellaneous	34	Clays, waters, &c.
	1,371	

Again there has been a marked falling-off in the number of samples received for gold and silver assay.

Most of the work consisted of assaying of gold, silver, tin, lead, copper, manganese, and other ores, with occasional full analyses of minerals.

Cobalt was determined in a large number of samples (67), these being chiefly field test borings.

The high market value of tantalite (60 per cent. Ta_2O_5 content, about £650 per ton) has led to more activity in the search for this mineral. A number of samples were submitted for analysis.

Most of the mine airs were samples regularly drawn from a sealed area at the Styx State Coal Mine at Ogmore, Central Queensland. Others were also taken in the Ipswich area.

Work in this section of the Laboratory also embraced the following matters of interest:—

A complete analysis of recent volcanic mud from Rabaul was carried out.

Examinations of air conditions obtaining in shafts and drives during sewerage constructional work were also made.

Concentrations of sulphuretted hydrogen up to ten parts per million were found in a shaft sunk in recent alluvium in the neighbourhood of Breakfast Creek.

In another shaft 12 feet deep, at Wooloowin, a miner received fatal injuries in an explosion.

On investigation, an explosive gaseous mixture of petrol vapour and air was found, as well as petrol in the water sump. Prior to this there had been no indications of petrol. The source of it was traced to a leaky underground storage tank about 50 yards away. Ground water had carried the spirit to the sump. This illustrates the importance of efficient bowsers.

While dealing with the inflammable qualities of petrol it is well to emphasise that its vapour, which is about two and a-half times as heavy as air, will flow to a naked light many yards away, even under a closed door.

Violent explosions result from the ignition of petrol vapour-air mixtures ranging from 1·5—6 per cent. petrol vapour.

The practice of discarding waste petrol through drains cannot be too roundly condemned.

During the year the Department was called upon to test the air in a ship's fuel tanks prior to repairs being effected.

POLICE DEPARTMENT.

There was again a record number of exhibits submitted by the police. Two hundred and twenty exhibits were examined, covering twenty post-mortem cases, where poisoning was alleged or suspected. Of these, forty-three were viscera and 177 foods, medicines, drugs, or utensils. Other cases of suspected food-poisoning provided thirty-eight exhibits.

Sixteen exhibits of dog-baits and one of dog viscera were examined.

Suspected opium-trafficking provided twenty-four exhibits.

Eighty-one miscellaneous exhibits, in connection with eighteen cases, were examined.

In addition to the analytical examination of exhibits, evidence by the Analyst was given in various parts of the State, to assist the court at the trial of the case. Such cases involved charges of murder, incendiarism, and other serious offences. Analysts attended eleven trials at Police Courts, and seven at Supreme and Circuit Courts.

An investigation was carried out to determine the possibility of estimating alcohol in a drop or two of the blood of persons suspected of being under the influence of alcohol. It was decided that at present with available methods the working error is great in such small amounts. The estimation can, however, be quite satisfactorily made in duplicate if about a third of an ounce is supplied.

PORTMASTER AND EXPLOSIVES.

The following table shows the number of cases of explosives imported into Queensland during the last three years:—

TABLE XII.

Explosive.	1935-36.	1936-37.	1937-38.
	Cases.	Cases.	Cases.
Nitro compounds	45,201	33,771	44,825
Blasting powder	5,050	3,800	4,498
	50,251	37,571	49,323

Of the 44,825 cases of nitro compounds, 36,090 were Australian, and 8,735 were from overseas.

LICENSES IN FORCE.

——	1936–37.	1937–38.
Bulk magazines	18	18
Retail magazines	581	575
Rackarock	20	22

The total fees received during the year amounted to £116 17s. 6d., as compared with £145 last year.

RAILWAY DEPARTMENT.

An increase is again shown in the work of this Department, 166 samples being examined, against 125 in the previous year.

The samples examined were:—

TABLE XIII.

Nature of Samples.	Number of Samples.
Textiles—	
Sheeting	61
Serge	58
Pillowslip	13
Coloured bunting	8
Overcoat material	6
Rug	3
Pocketting	2
Vest lining	2
Black Italian cloth	2
Towelling	1
Grease	4
Miscellaneous	6
	166

The textiles included the tender samples of the various lines, the most economical propositions of which were pointed out. The subsequent delivery samples from the successful tenderers were also examined.

It is pleasing to note the large increase in the number of samples of textiles examined for this Department.

Examination of textiles as carried out in this Laboratory, including as it does an examination of the true nature of the fibre, the weight, weave, strength, appearance, mineral filling, and shrinkage tests of the cloth, together with, in those cases where the fabric is dyed, the nature and quality of the dyestuff, offers a better, safer, and more reliable basis for economical buying than does the old inefficient method of judging quality of cloth by feel and appearance.

Apart from a few marked differences from the specified weights in the 16-oz. and 18-oz. serge, and some differences in shade of dye between the various deliveries of navy blue serge, little trouble was experienced, and the bulk of the delivery samples were well up to the standard of the respective tender samples.

All the navy-blue serges examined contained a commercial navy-blue dye, none being indigo-dyed.

A big improvement has been noticed of recent years in the quality of these commercial navy-blue cloth dyes, and the dyes in the samples submitted were equally fast to sunlight, washing, perspiration, and rubbing tests as indigo.

The samples of grease were for tariff classification, and the miscellaneous samples, which included litharge, red lead, and battery materials, were submitted relative to specification.

STATE STORES BOARD.

A total of 206 samples were examined for the State Stores Board, being a marked decrease of 231 samples on last year's figures. This is partly accounted for by the absence of tender samples of ink, which are submitted every second year only.

The samples examined were—

TABLE XIV.

Nature of Samples.	Number of Samples.
Ink and ink powder	57
Textiles	40
Soap	26
Disinfectant	17
Miscellaneous	66
	206

The miscellaneous samples included cleansing preparations, fly sprays, thermometers, insecticides, junket tablets, petrols, ointments, sauces, rubbers, washing blues, office pastes, paints, oils, jellies, custard powders, and arsenic.

The standard of the delivery samples of ink, textiles, soap, and disinfectant was satisfactory.

One isolated complaint from a Government department was associated with a sample of blue-black writing ink, found to be contaminated with mineral oil, due, no doubt, to the use of a dirty bottle by the manufacturer.

Work was done in an endeavour to get a mildew-resistant duck for use as tentage.

The best results were obtained on duck treated by the iron chromium process, as outlined in a Woolwich Arsenal report of March, 1935.

Cotton duck, so treated, offers a high resistance to microbiological attack, and, although the resultant khaki colour of the cloth is probably not as desirable as the white of the untreated duck, the mildew-resistant properties of the treated duck were so great that its use as tentage material was strongly recommended.

MAIN ROADS COMMISSION.

There were 829 samples of roadmaking material received during the year—a marked increase of 534 samples compared with the 295 samples received last year. The work entailed has been particularly heavy.

The samples received were—

TABLE XV.

Bitumen	545
Tar	60
Duratenax (Tar-bitumen)	89
Bitumen emulsion	100
Flux oil	34
Creosote	1
Miscellaneous	30
	859

OTHER DEPARTMENTS AND PUBLIC.

The following is a summary:—

TABLE XVI.

Department.	Number of Samples.	Nature of Samples.
Agriculture and Stock	66	Fabrics (65).
Brisbane and South Coast Hospitals Board	63	Mostly urine.
Bureau of Industry	19	
Home Affairs	182	Soap (8), water (14), Golden Casket Discs (160).
Irrigation and Water Supply	292	Water (224), Concrete (48).
Machinery	49	Petrol-alcohol (39), water (7).
Public Instruction	39	Disinfectants (31).
Public Works	24	Paint (21).
Several other Departments	37	
Public	294	Waters—Stock-owners, &c. (86), Townsville (103), Mackay (11).
	1,065	

WATERS.

Five hundred and eighty-nine samples of water were analysed during the year, a decrease of eighteen samples on the waters reported in the previous year.

There were 149 samples received from the Department of Health and Home Affairs, fourteen being from the engineer in connection with tests of the efficiency of zeolite water-softening plants installed. The remaining 135 samples included a few samples of sewage. The waters were examined for their potability from the chemical aspect, the necessary bacterial examination being made by the Department of Microbiology.

There was a falling-off in the number of samples received from the Irrigation and Water Supply Department; 224 waters and six samples of soil were received, as against 384 waters received last year. The samples included bore waters for stock purposes and samples taken from various creeks in connection with water facilities for inland towns. A number of samples of water were submitted to find their probable effect on concrete pipes.

The general public submitted eighty-six samples for analysis and advice, the waters being for stock, irrigation, steam-raising, or general domestic use.

One hundred and three samples of ground water were received from the Townsville City Council in connection with the sewerage scheme, and eleven samples from Mackay in connection with corrosion in the city water mains.

The Mines Department, Geological Survey, Forestry, and Department of Labour and Industry submitted samples for various purposes.

GENERAL.

The supply of the usual periodicals was maintained during the year, and the volumes were bound by the Government Printer as completed. A number of useful text-books of recent publication were also added. This necessary adjunct to the work of the Laboratory has, of course, proved extremely useful in meeting the problems, whether theoretical, analytical, or industrial, that were presented during the year, enabling the staff to keep in touch with scientific progress.

I wish to acknowledge the cordial co-operation given throughout the year by the whole staff in handling the work of the Laboratory.

Yours faithfully,

FRANK E. CONNAH,
Government Analyst and Chief Inspector of Explosives.

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